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EXPERIMENTAL QUIET ENGINE PROGRAM

Contract No. NAS3-12430

PREDICTED ENGINE PERFORMANCE

Issued April 8, 1970
Revised February 1973

Prepared for:

National Aeronautics and Space Administration
Lewis Research Center
Cleveland, Ohio, 44135

GENERAL ELECTRIC

AIRCRAFT ENGINE GROUP
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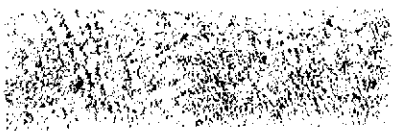

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ALT	Altitude (geopotential), feet
BPR	Bypass Ratio
Case	Identifying Number for Performance Point
EPNL	Effective Perceived Noise Level(1), EPNdB
EPR	Engine Pressure Ratio (LP Turbine Inlet Pressure/Fan Inlet Pressure)
FGD	Bypass Duct Gross Thrust, pounds
FGM	Core Stream Gross Thrust, pounds
FN	Net Thrust, pounds
MO	Flight Mach Number
NR	Inlet Ram Recovery
PCN	Core Engine Speed, percent
PCN*	Core Engine Corrected Speed, percent
PCNF*	Fan Corrected Speed, percent
PE	Bleed Air Reference Pressure, psia
PNL	Perceived Noise Level(1), PNdB
PNLT	Tone Corrected Perceived Noise Level(1), PNdB
PTB	Bleed Air Total Pressure, psia
PO	Ambient Pressure, psia
P2	Fan Inlet Total Pressure, psia
P8	Core Exhaust Nozzle Throat Total Pressure, psia
P28	Duct Exhaust Nozzle Throat Total Pressure, psia
SFC	Specific Fuel Consumption lbs/hr/lb
TC	Control Temperature (LP Turbine Inlet Temperature), °R
TE	Bleed Air Total Temperature, °R
TO	Ambient Temperature, °R
T2	Fan Inlet Total Temperature, °R
T8	Core Exhaust Nozzle Throat Total Temperature, °R
T28	Duct Exhaust Nozzle Throat Total Temperature, °R
WB	Compressor Interstage Bleed Flow, lbs/sec
WFM	Fuel Flow, lbs/hr
W2C	Core Engine Airflow, lbs/sec
W2*	Corrected Fan Inlet Flow, lbs/sec
θ2	Ratio of T2 to Standard Temperature (518.67°R)

(1) Based on Part 36-Noise Standards-Aircraft Type Certification, Volume III of the Federal Aviation Regulations.

1.0 INTRODUCTION

This report presents work performed by the General Electric Company for the NASA Lewis Research Center on the Experimental Quiet Engine Program (Contract NAS3-12430).

Included herein are predicted performance data for three experimental engine designs two of which were tested in the latter part of the program. These experimental engines provided design data which will potentially allow achievement of program objectives. The engines differ primarily in the low-noise design features which have been factored into the fan component designs. The engines incorporating these fans were designed under Phase I of the program.

The flight performance of these engines is based on the predicted component performance. These data have been updated to reflect SLS test results obtained from Engines A and C at the General Electric Company Peebles test facility.

2.0 SUMMARY

Three turbofan configurations, each incorporating alternative noise reduction features, were tested under the Quiet Engine Program. Performance data for these engines are shown over a range of flight conditions. The data are presented in tabular form for standard day flight inlet conditions. Procedures for estimating nonstandard day performance are shown. Tabular data and calculation procedures to allow determination of ram recovery, customer bleed, and customer shaft power extraction effects on engine performance can be found in the original Performance Brochure titled, "Experimental Quiet Engine Program, Predicted Engine Performance", dated April 8, 1970. Predicted engine noise levels for representative take-off and approach conditions are provided.

3.0 ENGINE PERFORMANCE

Under the Experimental Quiet Engine Program, experimental turbofan engines were designed and fabricated to incorporate technology and design innovations to reduce the production and radiation of noise relative to current-day or near-future propulsion systems. As part of this program, three different turbofan configurations, each incorporating alternative noise reduction features were tested.

Predicted performance (based on Sea Level Static test results) for each of the three test engine configurations is presented. The three engines are each sized for the same uninstalled net thrust at the design point, Mach 0.82, 35000 feet. The engine characteristics at the design point condition are shown below.

Engine	Corrected Airflow (Lbs/Sec)	Fan Pressure Ratio	Net Thrust (Pounds)	SFC (Lbs/Hr/Lb)
Fan A	961	1.49	4900	0.645
Fan B	957	1.48	4900	0.652
Fan C	923	1.66	4900	0.673

The performance at sea level static is established by operation to an uninstalled thrust level of 22000 pounds.

The fan and fan turbine components on the engines were designed or modified for use specifically in the Experimental Quiet Engine Program. The engine performance shown is based on the predicted performance maps for these components determined under Phase I of the program and modified to agree with the SLS test results of Quiet Engines A and C. All three engines utilize the CF6/TF39 core gas generator.

STANDARD DAY PERFORMANCE

Performance data are presented for a range of flight conditions over the flight envelope shown in Figure 1. Data are shown at the following altitudes:

Sea Level
10000 Feet
20000 Feet
30000 Feet
35000 Feet
40000 Feet
45000 Feet
50000 Feet

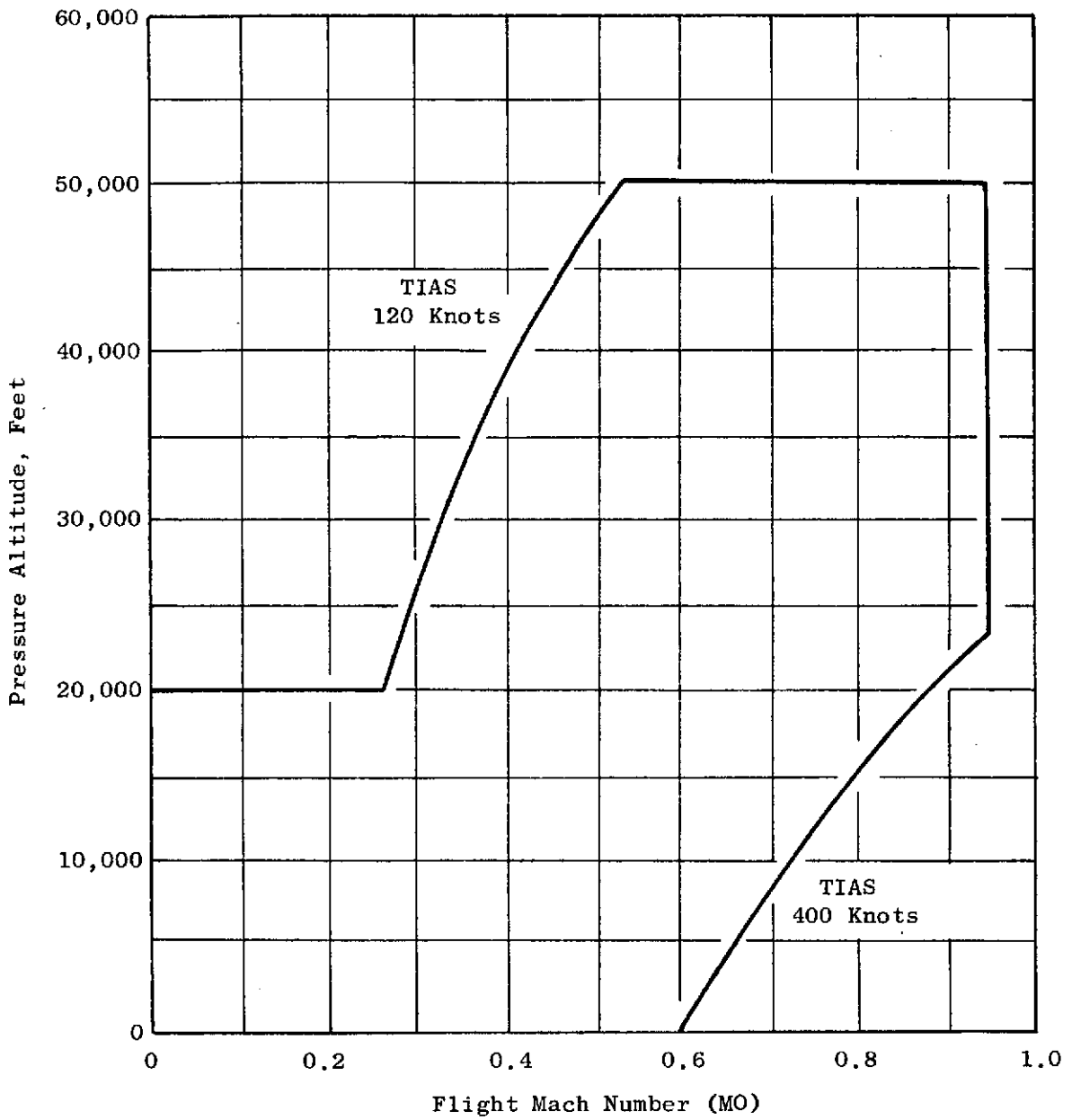


Figure 1. Flight Operations Envelope.

U. S. Standard Atmosphere, 1962, standard day inlet conditions and 100% ram recovery are assumed. The thrust levels shown are uninstalled values based on ideal exhaust nozzle performance. Representative test engine fan duct and tailpipe pressure losses are included. No customer bleed or power extraction is assumed. The fuel lower heating value is 18400 Btu/lb.

NONSTANDARD DAY PERFORMANCE

The engine control mode has been defined to provide essentially constant maximum thrust over a range of nonstandard day conditions from a -20°F cold day to a +30.8°F hot day at 10000 feet altitude and sea level and a +20.2°F hot day at 20000 feet and above. The deviation of maximum thrust from the standard day value is minimal as shown in Table I.

The procedure for estimating the specific fuel consumption (SFC) at nonstandard-day conditions is shown in the Calculation Procedure.

INSTALLATION EFFECTS

Data to define installation effects on engine performance at several principal flight conditions can be found in the original Performance Brochure titled, "Experimental Quiet Engine Program, Predicted Engine Performance", dated April 8, 1970. The data show effects of ram recovery, compressor interstage bleed, and shaft power extraction at maximum power setting.

Table I. Quiet Engine - Fan A, Maximum Net Thrust (Pounds).

Alt (Ft)	MO	Cold Day (Std -20°F)	Std Day	Hot Day (Std +30.8°F)	Alt (Ft)	MO	Cold Day (Std -20°F)	Std Day	Hot Day (Std +20.2°F)
0	0	22028	22000	22060	35000	0.374	5676	5682	5688
	0.25	16044	16046	16145		0.4	5585	5592	5597
	0.4	13288	13334	13414		0.5	5290	5297	5302
	0.5	11650	11708	11758		0.6	5085	5093	5097
	0.6	10097	10158	10174		0.7	4954	4960	4967
						0.82	4885	4900	4891
10000	0	18363	18283	18151		0.9	4893	4901	4882
	0.25	13880	13819	13699		0.95	4910	4899	4877
	0.4	11752	11717	11665					
	0.5	10482	10460	10475	40000	0.422	4347	4354	4358
	0.6	9298	9301	9372		0.5	4175	4181	4186
	0.729	7848	7883	7949		0.6	4012	4018	4025
				(Std +20.2°F)		0.7	3908	3917	3924
20000	0	11829	11837	11849		0.82	3856	3864	3863
	0.267	9072	9078	9080		0.9	3863	3870	3861
	0.4	8274	8304	8272		0.95	3866	3872	3859
	0.5	7789	7813	7804					
	0.6	7473	7483	7492	45000	0.475	3245	3253	3257
	0.7	7260	7263	7280		0.6	3077	3085	3091
	0.892	6904	6889	6927		0.7	2998	3005	3012
						0.82	2960	2967	2968
30000	0.333	6733	6740	6744		0.9	2960	2968	2963
	0.4	6439	6447	6451		0.95	2963	2969	2961
	0.5	6091	6097	6103					
	0.6	5842	5843	5846	50000	0.536	2415	2421	2426
	0.7	5727	5712	5695		0.6	2357	2362	2367
	0.82	5617	5637	5586		0.7	2300	2300	2304
	0.9	5509	5509	5511		0.82	2264	2270	2271
	0.95	5486	5480	5495		0.9	2260	2268	2266
						0.95	2262	2268	2266

Table I. Quiet Engine - Fan B, Maximum Net Thrust (Pounds).

Alt (Ft)	MO	Cold Day (Std -20°F)	Std Day	Hot Day (Std +30.8°F)	Alt (Ft)	MO	Cold Day (Std -20°F)	Std Day	Hot Day (Std +20.2°F)
0	0	22000	21998	22111	35000	0.374	5679	5686	5697
	0.25	16111	16134	16238		0.4	5598	5610	5610
	0.4	13404	13455	13539		0.5	5314	5317	5323
	0.5	11795	11847	11896		0.6	5093	5100	5106
	0.6	10249	10312	10331		0.7	4951	4957	4966
						0.82	4889	4899	4898
10000	0	18369	18294	18164		0.9	4890	4887	4880
	0.25	13871	13820	13735		0.95	4896	4876	4872
	0.4	11803	11774	11764					
	0.5	10575	10569	10611	40000	0.422	4361	4370	4376
	0.6	9444	9445	9520		0.5	4192	4199	4204
	0.729	8015	8053	8107		0.6	4019	4027	4036
				(Std +20.2°F)		0.7	3914	3924	3930
20000	0	11777	11771	11792		0.82	3864	3870	3875
	0.267	9052	9076	9058		0.9	3863	3869	3865
	0.4	8205	8238	8232		0.95	3859	3864	3862
	0.5	7740	7772	7786					
	0.6	7419	7448	7473	45000	0.475	3249	3257	3265
	0.7	7193	7199	7234		0.6	3075	3083	3092
	0.892	6848	6845	6880		0.7	3011	3018	3023
						0.82	2968	2973	2978
30000	0.333	6687	6692	6697		0.9	2960	2968	2969
	0.4	6395	6402	6408		0.95	2958	2964	2967
	0.5	6060	6066	6069					
	0.6	5837	5831	5833	50000	0.536	2411	2418	2425
	0.7	5721	5704	5691		0.6	2362	2369	2373
	0.82	5557	5581	5564		0.7	2303	2311	2315
	0.9	5460	5463	5491		0.82	2273	2279	2283
	0.95	5455	5476	5489		0.9	2264	2270	2275
						0.95	2263	2268	2274

Table I. Quiet Engine - Fan C, Maximum Net Thrust (Pounds).

Alt. (Ft.)	MO	Cold Day	Std. Day	Hot Day (Std. + 30.8°)	Alt.	MO	Cold Day	Std. Day	Hot Day (Std. + 20.2°)
0	0	21990	22000	22158	35000	.374	5535	5555	5561
	.25	15959	16013	16162		.4	5473	5483	5497
	.4	13023	13099	13225		.5	5237	5252	5256
	.5	11257	11342	11429		.6	5079	5089	5100
	.6	9623	9710	9759		.7	4972	4986	4998
						.82	4904	4900	4906
10000	0	18544	18504	18449		.9	4846	4856	4848
	.25	13844	13829	13807		.95	4765	4805	4795
	.4	11541	11548	11585					
	.5	10159	10175	10270	40000	.422	4265	4278	4288
	.6	8883	8903	9016		.5	4129	4151	4157
	.729	7341	7397	7489		.6	4009	4018	4029
				(Std.+ 20.2°)		.7	3930	3941	3952
20000	0	11974	12034	12064		.82	3861	3873	3883
	.267	9156	9213	9243		.9	3823	3837	3846
	.4	8279	8337	8369		.95	3788	3803	3815
	.5	7809	7827	7864					
	.6	7450	7442	7470	45000	.475	3228	3235	3244
	.7	7138	7136	7144		.6	3095	3104	3114
	.892	6423	6443	6491		.7	3020	3031	3040
						.82	2956	2968	2978
30000	.333	6763	6772	6781		.9	2922	2935	2944
	.4	6479	6478	6491		.95	2899	2912	2924
	.5	6154	6144	6153					
	.6	5889	5914	5904	50000	.536	2426	2434	2441
	.7	5647	5679	5682		.6	2371	2381	2389
	.82	5436	5464	5487		.7	2305	2314	2324
	.9	5307	5355	5381		.82	2250	2262	2272
	.95	5208	5261	5301		.9	2224	2236	2246
						.95	2205	2215	2227

4.0 PERFORMANCE CALCULATION PROCEDURE

The flight performance of each Quiet Engine cycle is presented in tabular form for standard-day inlet conditions. Each tabulated performance point is identified by a case number. For first order approximations, linear interpolation between tabulated conditions may be utilized. For more accurate studies, cross plotting should be used.

The sample calculations which follow show how performance may be determined at nontabulated values of:

Corrected Speed
Mach Number
Altitude
Ambient Temperature

Intermediate Corrected Speed

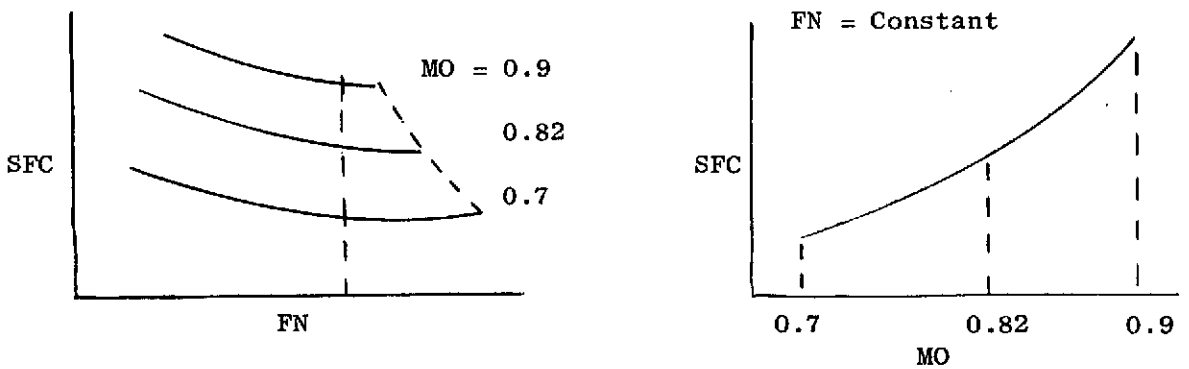
To determine performance at a corrected speed (PCN*) not tabulated, all desired performance parameters can be plotted versus PCN*.

Example: For Fan A
At MO = 0.70, 35,000 feet Standard Day, Uninstalled
Obtain performance at PCN* = 88.5

Fan A	From Tabular Data			From Cross-plots
Case	166	167	168	--
PCN*	89.8	87.8	85.6	88.5
FN	4960	4000	3000	4280
SFC	.602	.607	.629	.605

Intermediate Altitude of Mach Number

To determine performance at an altitude or Mach number not tabulated, plot the tabulated values at altitudes and/or Mach numbers above and below the desired flight condition, and cross plot to obtain the desired parameter. For example, if performance is desired at 0.8 Mach number at 40,000 feet, plot net thrust versus SFC for Mach numbers 0.7, 0.82, and 0.9 at 40,000 ft. Then plot Mach number versus SFC for any desired thrust level (less than maximum) and read SFC for 0.8 Mach number.



A similar procedure can be used to determine performance at intermediate altitudes.

Nonstandard Ambient Temperature

To determine SFC for a nonstandard day at constant net thrust, use the following method. Performance is not valid for ambient temperatures greater or less than those shown in Table I.

The method of calculating SFC for nonstandard day is the same for all three engines; however, the exponent (X) used in the calculation is different for each engine.

	Exponent
Quiet Engine Fan A	X = 0.62
Quiet Engine Fan B	X = 0.63
Quiet Engine Fan C	X = 0.62

$$SFC_{(nonstd)} = SFC_{(std)} \left[\frac{\theta 2_{(nonstd)}}{\theta 2_{(std)}} \right]^{X}$$

Example: Quiet Engine Fan B, X = 0.63
At MO = 0.82, 35,000 Feet, FN = 4000
Uninstalled, Ambient Temperature = Std + 20.2°F

$$SFC_{(nonstd)} = SFC_{(std)} \left[\frac{\theta 2_{(nonstd)}}{\theta 2_{(std)}} \right]^{0.63}$$

Fan B	From Tabular Data	From Calculation
Case	173	--
ΔT0	0	+20.2°F
T2	447.0	470.0
FN	4000	4000
SFC	0.656	.677

5.0 PREDICTED FLIGHT NOISE LEVELS

Projected engine noise levels for the three Experimental Quiet Engine configurations were determined for typical take-off and approach conditions. The projections were based on application of acoustic treatment in the fan frames and the transition ducting into the core engine inlet.

Engine A and Engine C projections are based on General Electric static engine test data obtained at the Peebles, Ohio test facility. Engine B projections are based on Fan B test data taken at NASA Lewis by NASA and suitable SAE jet core noise predictions.

For reference, the flight path of a current commercial operational four-engine long-range aircraft was used as the basis for noise level projections. The take-off condition is at a location 3.5 nautical miles from touchdown. The results for the four suppressed engines are shown in Table II.

Table II. Experimental Quiet Engine Predicted Noise Levels
(Four Suppressed Engines)

	$PNL_{max.}$			$PNLT_{max.}$			EPNL		
Quiet Engine	A	B	C	A	B	C	A	B	C
Take-off	99.3	105.5	101.5	101.0	106.9	102.6	98.4	104.0	102.3
Approach	105.1	106.1	104.2	105.8	107.6	107.8	100.5	101.6	102.4

FAN A

STANDARD DAY PERFORMANCE

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = SEA LEVEL MO=0

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
1.	22000.	0.360	7921.	1754.	3.61	833.	123.4	5.75	87.2	89.3
2.	20000.	0.356	7122.	1699.	3.37	795.	116.7	5.82	86.2	86.1
3.	17999.	0.352	6338.	1640.	3.13	756.	109.8	5.88	85.2	82.5
4.	15998.	0.347	5549.	1577.	2.88	714.	102.4	5.98	84.1	78.6
5.	14001.	0.344	4823.	1516.	2.64	670.	94.6	6.08	82.8	74.0
6.	12001.	0.348	4179.	1456.	2.41	621.	87.1	6.12	81.6	69.3
7.	10000.	0.352	3523.	1395.	2.16	568.	78.5	6.23	79.8	63.6
8.	8001.	0.363	2903.	1343.	1.92	509.	68.6	6.41	77.8	57.6
9.	6001.	0.388	2330.	1298.	1.68	441.	58.0	6.60	75.3	50.6
10.	4001.	0.438	1752.	1246.	1.44	360.	46.0	6.83	71.6	41.3
11.	2000.	0.587	1175.	1211.	1.22	255.	31.5	7.08	63.6	28.9
	1000.	0.780	780.	1105.	1.11	181.	23.9	6.58	52.4	14.4

ALT = SEA LEVEL MO=0.25

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
12.	16046.	0.475	7627.	1739.	3.45	833.	124.1	5.96	86.6	87.8
13.	14999.	0.476	7139.	1704.	3.31	811.	119.9	6.02	86.0	85.7
14.	12000.	0.479	5744.	1597.	2.89	746.	107.1	6.23	84.2	79.1
15.	9000.	0.496	4467.	1487.	2.46	671.	93.0	6.49	82.0	71.0
16.	6000.	0.541	3247.	1369.	2.02	582.	76.9	6.85	78.9	60.7
17.	3000.	0.702	2107.	1272.	1.56	466.	55.9	7.65	74.1	47.2
18.	1000.	1.263	1263.	1193.	1.23	355.	36.2	9.17	66.2	32.7

ALT = SEA LEVEL MO=0.4

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
19.	13334.	0.557	7426.	1716.	3.23	829.	125.0	6.29	85.8	85.4
20.	11999.	0.561	6733.	1665.	3.04	802.	119.0	6.41	85.0	82.4
21.	9004.	0.579	5213.	1544.	2.59	736.	103.9	6.78	82.8	74.5
22.	6000.	0.636	3819.	1417.	2.12	656.	87.0	7.29	80.0	64.3
23.	3000.	0.819	2458.	1290.	1.62	555.	65.0	8.39	75.6	50.6
24.	1000.	1.567	1567.	1198.	1.29	464.	46.3	10.02	69.9	41.2

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = SEA LEVEL MO=0

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
1.	14.70	518.7	66.2	863.	1.39	579.9	1.34	1408.	17388.	4611.
2.	14.70	518.7	62.6	845.	1.35	575.2	1.30	1373.	15917.	4083.
3.	14.70	518.7	58.9	826.	1.32	570.3	1.26	1337.	14426.	3573.
4.	14.70	518.7	54.8	804.	1.28	565.0	1.23	1299.	12933.	3066.
5.	14.70	518.7	50.5	781.	1.24	559.5	1.19	1264.	11412.	2589.
6.	14.70	518.7	46.3	758.	1.21	554.8	1.16	1231.	9831.	2169.
7.	14.70	518.7	41.7	731.	1.17	549.2	1.13	1200.	8256.	1744.
8.	14.70	518.7	36.6	705.	1.14	543.3	1.10	1180.	6666.	1335.
9.	14.70	518.7	31.2	678.	1.10	537.4	1.07	1169.	5039.	962.
10.	14.70	518.7	24.8	646.	1.07	531.1	1.04	1157.	3392.	610.
11.	14.70	518.7	17.3	608.	1.03	525.0	1.02	1162.	1708.	293.
	14.70	518.7	12.8	577.	1.02	521.6	1.01	1081.	846.	154.

ALT = SEA LEVEL MO=0.25

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
12.	15.35	525.2	67.0	863.	1.42	583.5	1.35	1396.	18895.	4652.
13.	15.35	525.2	64.7	852.	1.40	580.6	1.32	1375.	17991.	4318.
14.	15.35	525.2	57.6	816.	1.34	571.4	1.25	1308.	15341.	3381.
15.	15.35	525.2	49.7	775.	1.27	561.9	1.19	1245.	12533.	2512.
16.	15.35	525.2	40.9	726.	1.20	551.5	1.13	1184.	9543.	1697.
17.	15.35	525.2	30.0	674.	1.13	539.9	1.07	1154.	6271.	925.
18.	15.35	525.2	19.6	624.	1.08	531.1	1.03	1134.	3779.	419.

ALT = SEA LEVEL MO=0.4

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
19.	16.41	535.3	68.0	864.	1.49	589.6	1.36	1379.	21288.	4708.
20.	16.41	535.3	64.6	847.	1.45	585.4	1.32	1346.	20013.	4234.
21.	16.41	535.3	56.0	805.	1.38	574.9	1.24	1274.	17047.	3185.
22.	16.41	535.3	46.5	756.	1.30	564.0	1.17	1204.	13795.	2222.
23.	16.41	535.3	34.8	700.	1.22	551.6	1.10	1149.	10194.	1286.
24.	16.41	535.3	24.8	654.	1.15	543.2	1.06	1114.	7382.	706.

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = SEA LEVEL MO=0.5

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
25.	11708.	0.619	7243.	1692.	3.04	824.	125.8	6.58	85.0	83.2
26.	11C00.	0.623	6853.	1663.	2.93	810.	122.3	6.66	84.6	81.6
27.	9001.	0.641	5768.	1580.	2.63	768.	111.8	6.95	83.2	76.3
28.	6000.	0.705	4227.	1447.	2.16	696.	94.1	7.56	80.4	66.5
29.	3C00.	0.908	2725.	1301.	1.66	607.	72.0	8.76	76.3	53.3
30.	1C00.	1.782	1782.	1210.	1.32	527.	53.0	10.52	71.5	44.8

ALT = SEA LEVEL MO=0.6

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
31.	10158.	0.689	6995.	1660.	2.81	813.	126.5	6.93	84.2	80.6
32.	9999.	0.690	6903.	1653.	2.79	810.	125.6	6.95	84.1	80.2
33.	8003.	0.722	5783.	1571.	2.49	771.	114.4	7.30	82.6	74.7
34.	6001.	0.778	4670.	1477.	2.17	726.	101.8	7.79	80.7	68.3
35.	4000.	0.891	3565.	1376.	1.84	676.	87.1	8.56	78.3	60.6
36.	2000.	1.245	2491.	1269.	1.50	616.	69.7	9.88	74.9	50.9

ALT = 10000 MO=0

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
37.	18283.	0.358	6544.	1769.	4.17	911.	98.1	5.62	89.3	96.4
38.	15000.	0.345	5171.	1638.	3.59	829.	87.3	5.76	87.1	89.1
39.	12000.	0.337	4039.	1518.	3.07	745.	76.8	5.91	84.9	81.5
40.	9000.	0.335	3016.	1402.	2.54	647.	64.6	6.14	82.2	72.0
41.	6000.	0.349	2096.	1280.	2.01	530.	51.3	6.37	78.5	60.0
42.	3000.	0.418	1253.	1168.	1.48	376.	34.4	6.79	72.5	42.9
43.	1000.	0.661	661.	1071.	1.16	218.	19.9	6.80	57.9	22.1

ALT = 10000 MO=0.25

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
44.	13819.	0.460	6353.	1755.	4.02	908.	99.2	5.77	88.7	95.1
45.	12000.	0.456	5466.	1670.	3.66	860.	92.2	5.90	87.4	90.4
46.	9000.	0.457	4111.	1526.	3.06	771.	79.9	6.13	84.9	81.7
47.	6000.	0.483	2898.	1386.	2.43	663.	65.1	6.53	81.7	70.2
48.	3000.	0.585	1754.	1230.	1.77	523.	46.9	7.25	76.7	53.7
49.	1000.	1.006	1006.	1130.	1.31	384.	29.8	8.55	69.1	38.2

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = SEA LEVEL MO=0.5

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
25.	17.44	544.7	68.8	863.	1.54	595.6	1.36	1361.	23515.	4746.
26.	17.44	544.7	66.9	854.	1.52	593.2	1.34	1342.	22796.	4476.
27.	17.44	544.7	60.8	825.	1.47	586.1	1.28	1292.	20717.	3718.
28.	17.44	544.7	50.6	776.	1.39	574.8	1.20	1216.	17362.	2630.
29.	17.44	544.7	38.5	720.	1.30	562.1	1.13	1144.	13604.	1591.
30.	17.44	544.7	28.2	675.	1.23	553.7	1.08	1109.	10649.	945.

ALT = SEA LEVEL MO=0.6

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
31.	18.75	556.1	69.6	861.	1.62	603.2	1.37	1337.	26255.	4780.
32.	18.75	556.1	69.1	859.	1.61	602.6	1.36	1333.	26083.	4716.
33.	18.75	556.1	62.5	830.	1.55	595.4	1.30	1283.	23875.	3905.
34.	18.75	556.1	55.1	796.	1.49	587.6	1.24	1229.	21540.	3106.
35.	18.75	556.1	46.9	759.	1.43	579.1	1.18	1175.	19035.	2321.
36.	18.75	556.1	37.4	719.	1.36	570.3	1.13	1123.	16227.	1573.

ALT = 10000 MO=0

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
37.	10.11	483.0	50.9	843.	1.47	550.3	1.45	1399.	14224.	4059.
38.	10.11	483.0	45.4	805.	1.38	539.8	1.34	1311.	11874.	3125.
39.	10.11	483.0	39.9	766.	1.31	529.9	1.25	1237.	9645.	2355.
40.	10.11	483.0	33.5	718.	1.23	519.2	1.17	1173.	7360.	1640.
41.	10.11	483.0	26.5	665.	1.15	508.0	1.11	1113.	4985.	1014.
42.	10.11	483.0	17.9	607.	1.08	495.6	1.05	1077.	2540.	460.
43.	10.11	483.0	10.4	552.	1.02	487.3	1.02	1038.	850.	150.

ALT = 10000 MO=0.25

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
44.	10.56	489.1	51.9	845.	1.51	554.2	1.46	1387.	15316.	4127.
45.	10.56	489.1	48.2	820.	1.46	547.3	1.38	1330.	13826.	3501.
46.	10.56	489.1	41.6	776.	1.36	535.4	1.28	1238.	11219.	2555.
47.	10.56	489.1	33.7	719.	1.26	522.6	1.18	1161.	8436.	1672.
48.	10.56	489.1	24.2	652.	1.16	507.7	1.09	1088.	5372.	867.
49.	10.56	489.1	15.6	595.	1.09	496.8	1.04	1059.	3012.	371.

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 10000 MO=0.4

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
50.	11717.	0.528	6190.	1726.	3.78	898.	100.5	6.00	87.9	92.7
51.	9002.	0.532	4792.	1590.	3.21	825.	88.5	6.30	85.7	84.9
52.	6000.	0.560	3362.	1430.	2.56	729.	73.1	6.81	82.6	73.8
53.	2999.	0.688	2063.	1269.	1.86	604.	53.7	7.81	77.8	57.7
54.	1000.	1.216	1216.	1139.	1.38	488.	36.8	9.38	72.0	44.2

ALT = 10000 MO=0.5

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
55.	10460.	0.579	6058.	1700.	3.56	887.	101.5	6.21	87.1	90.6
56.	9002.	0.584	5262.	1626.	3.25	850.	94.5	6.42	85.9	86.3
57.	6000.	0.617	3704.	1458.	2.60	762.	78.9	6.97	83.0	75.6
58.	3000.	0.757	2271.	1286.	1.89	650.	58.7	8.13	78.4	60.0
59.	1000.	1.356	1357.	1149.	1.40	547.	41.3	9.92	73.0	46.6

ALT = 10000 MO=0.6

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
60.	9301.	0.634	5901.	1671.	3.31	873.	102.4	6.48	86.2	88.0
61.	8000.	0.644	5154.	1602.	3.03	841.	95.7	6.71	85.1	84.0
62.	6002.	0.678	4069.	1487.	2.61	786.	84.9	7.12	83.2	76.8
63.	4000.	0.753	3010.	1365.	2.15	722.	71.8	7.83	80.5	67.6
64.	2000.	1.000	2001.	1239.	1.66	644.	55.5	9.18	76.6	55.7

ALT = 10000 MO=0.729

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
65.	7883.	0.714	5629.	1628.	2.95	847.	103.4	6.90	84.9	83.9
66.	6999.	0.728	5097.	1577.	2.77	827.	98.6	7.09	84.1	81.1
67.	6000.	0.756	4535.	1522.	2.57	802.	92.7	7.35	83.1	77.6
68.	4000.	0.846	3383.	1395.	2.13	747.	79.4	8.09	80.6	69.2
69.	1999.	1.124	2248.	1259.	1.65	681.	62.4	9.53	77.0	58.6

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 10000 MO=0.4

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
50.	11.29	498.5	53.0	844.	1.57	559.8	1.47	1363.	16966.	4181.
51.	11.29	498.5	46.5	804.	1.48	548.5	1.35	1275.	14491.	3169.
52.	11.29	498.5	38.1	747.	1.37	534.7	1.23	1179.	11524.	2125.
53.	11.29	498.5	27.9	677.	1.26	519.2	1.13	1101.	8171.	1169.
54.	11.29	498.5	19.0	622.	1.17	507.9	1.07	1045.	5536.	583.

ALT = 10000 MO=0.5

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
55.	11.99	507.3	53.8	844.	1.64	565.3	1.47	1343.	18507.	4220.
56.	11.99	507.3	50.1	822.	1.58	559.1	1.40	1295.	17123.	3627.
57.	11.99	507.3	41.4	766.	1.46	545.0	1.28	1190.	14048.	2484.
58.	11.99	507.3	30.5	694.	1.34	529.1	1.16	1102.	10568.	1411.
59.	11.99	507.3	21.3	639.	1.24	517.6	1.09	1040.	7808.	753.

ALT = 10000 MO=0.6

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
60.	12.89	517.9	54.8	844.	1.71	572.4	1.48	1321.	20448.	4261.
61.	12.89	517.9	51.0	822.	1.66	566.5	1.42	1276.	19137.	3700.
62.	12.89	517.9	44.9	785.	1.58	557.1	1.32	1204.	16984.	2887.
63.	12.89	517.9	37.5	739.	1.49	546.6	1.24	1135.	14666.	2082.
64.	12.89	517.9	28.9	688.	1.39	535.1	1.15	1075.	12051.	1315.

ALT = 10000 MO=0.729

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
65.	14.40	534.6	55.9	842.	1.84	583.8	1.49	1289.	23549.	4301.
66.	14.40	534.6	53.1	827.	1.80	579.8	1.45	1255.	22591.	3897.
67.	14.40	534.6	49.6	808.	1.76	575.1	1.40	1222.	21452.	3452.
68.	14.40	534.6	42.0	764.	1.66	564.7	1.30	1146.	19056.	2559.
69.	14.40	534.6	32.7	714.	1.55	553.0	1.20	1075.	16369.	1680.

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 20000 MO=0

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
70.	11837.	0.344	4075.	1651.	4.08	896.	66.1	5.71	88.7	95.2
71.	10000.	0.334	3339.	1546.	3.60	827.	59.9	5.84	86.9	89.1
72.	8000.	0.327	2613.	1425.	3.08	743.	52.8	5.96	84.8	81.5
73.	6000.	0.326	1957.	1305.	2.55	646.	44.7	6.15	82.2	72.0
74.	4000.	0.343	1373.	1189.	2.02	530.	35.5	6.39	78.5	59.9
75.	2000.	0.415	831.	1086.	1.49	375.	23.8	6.82	72.4	42.9

ALT = 20000 MO=0.267

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
76.	9078.	0.451	4095.	1655.	4.01	906.	68.3	5.85	88.5	95.0
77.	8000.	0.448	3583.	1583.	3.68	864.	63.9	5.97	87.3	90.8
78.	6000.	0.451	2705.	1443.	3.08	776.	55.6	6.21	84.9	82.1
79.	4000.	0.478	1913.	1297.	2.46	670.	45.6	6.59	81.8	70.6
80.	2000.	0.586	1172.	1144.	1.79	532.	33.0	7.32	76.9	54.2

ALT = 20000 MO=0.4

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
81.	8304.	0.511	4240.	1660.	3.93	914.	71.1	6.00	88.3	94.6
82.	7000.	0.510	3568.	1566.	3.52	865.	65.4	6.19	86.8	89.3
83.	6000.	0.515	3091.	1498.	3.21	823.	60.7	6.37	85.5	84.8
84.	4001.	0.545	2179.	1339.	2.56	727.	50.4	6.86	82.6	73.7
85.	2000.	0.673	1345.	1172.	1.87	604.	37.3	7.79	77.9	57.7

ALT = 20000 MO=0.5

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
86.	7813.	0.556	4344.	1655.	3.82	916.	73.7	6.12	88.0	93.9
87.	7000.	0.558	3904.	1599.	3.56	887.	69.9	6.27	87.0	90.6
88.	6000.	0.563	3377.	1525.	3.25	848.	65.0	6.47	85.8	86.2
89.	4000.	0.600	2399.	1370.	2.60	760.	54.2	7.04	82.9	75.5
90.	2000.	0.741	1482.	1192.	1.90	649.	40.7	8.13	78.4	60.0

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 20000 MO=0

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
70.	6.75	447.3	33.6	779.	1.46	508.4	1.42	1305.	9253.	2584.
71.	6.75	447.3	30.4	747.	1.38	500.1	1.34	1235.	7931.	2069.
72.	6.75	447.3	26.7	710.	1.31	490.8	1.25	1159.	6438.	1562.
73.	6.75	447.3	22.4	667.	1.23	480.9	1.17	1090.	4910.	1090.
74.	6.75	447.3	17.7	617.	1.15	470.5	1.11	1033.	3326.	674.
75.	6.75	447.3	12.0	563.	1.08	459.0	1.05	1001.	1695.	306.

ALT = 20000 MO=0.267

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
76.	7.10	453.8	34.9	786.	1.52	514.0	1.46	1305.	10356.	2749.
77.	7.10	453.8	32.6	764.	1.47	508.3	1.39	1256.	9466.	2374.
78.	7.10	453.8	28.2	722.	1.37	497.2	1.28	1167.	7711.	1738.
79.	7.10	453.8	22.9	670.	1.27	485.1	1.18	1082.	5836.	1142.
80.	7.10	453.8	16.5	607.	1.17	471.3	1.10	1008.	3767.	597.

ALT = 20000 MO=0.4

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
81.	7.54	461.7	36.5	794.	1.60	521.4	1.49	1305.	11760.	2958.
82.	7.54	461.7	33.5	767.	1.53	514.0	1.41	1241.	10606.	2461.
83.	7.54	461.7	31.1	746.	1.48	508.1	1.35	1198.	9671.	2099.
84.	7.54	461.7	25.5	693.	1.37	495.2	1.23	1102.	7692.	1411.
85.	7.54	461.7	18.7	628.	1.26	480.9	1.13	1015.	5455.	779.

ALT = 20000 MO=0.5

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
86.	8.01	469.8	38.1	801.	1.68	528.5	1.53	1298.	13128.	3144.
87.	8.01	469.8	36.1	784.	1.64	523.8	1.47	1260.	12385.	2804.
88.	8.01	469.8	33.5	762.	1.58	517.8	1.40	1211.	11430.	2405.
89.	8.01	469.8	27.6	710.	1.46	504.7	1.27	1117.	9377.	1645.
90.	8.01	469.8	20.4	644.	1.34	490.0	1.16	1020.	7055.	939.

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 20000 MO=0.6

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
91.	7483.	0.602	4501.	1653.	3.71	915.	77.2	6.23	87.7	93.2
92.	6999.	0.604	4225.	1620.	3.56	899.	74.7	6.34	87.1	91.2
93.	6000.	0.612	3669.	1550.	3.25	864.	69.5	6.58	85.9	87.0
94.	4000.	0.657	2629.	1398.	2.61	784.	58.2	7.20	83.1	76.7
95.	2000.	0.810	1619.	1210.	1.91	685.	44.2	8.44	78.7	62.0

ALT = 20000 MO=0.7

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
96.	7263.	0.646	4688.	1651.	3.58	910.	81.3	6.33	87.3	92.2
97.	6000.	0.658	3950.	1567.	3.20	870.	74.4	6.66	85.8	87.2
98.	5000.	0.677	3386.	1493.	2.89	836.	68.7	6.98	84.6	82.7
99.	3000.	0.775	2326.	1336.	2.26	756.	55.9	7.87	81.3	71.2
100.	1000.	1.266	1266.	1129.	1.54	653.	38.9	10.00	75.7	54.9

ALT = 20000 MO=0.892

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
101.	6889.	0.729	5024.	1648.	3.24	886.	89.4	6.64	86.2	89.1
102.	4999.	0.764	3820.	1508.	2.72	832.	78.3	7.19	84.1	81.7
103.	3999.	0.810	3240.	1438.	2.44	800.	71.5	7.62	82.6	76.9
104.	3000.	0.888	2664.	1361.	2.14	765.	64.2	8.19	80.9	71.3
105.	1000.	1.475	1475.	1154.	1.49	685.	46.1	10.46	75.8	58.0

ALT = 30000 MO=0.333

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
106.	6740.	0.464	3125.	1646.	4.55	973.	51.5	5.73	90.6	102.2
107.	6000.	0.460	2757.	1580.	4.18	933.	48.2	5.89	89.1	97.3
108.	5000.	0.460	2298.	1481.	3.71	874.	44.0	6.07	87.4	91.2
109.	4000.	0.468	1871.	1379.	3.23	809.	39.5	6.28	85.5	84.5
110.	2000.	0.538	1076.	1157.	2.22	645.	28.6	7.03	80.4	65.5

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 20000 MO=0.6

CASE	P2	T2	PE	TE	P28/PO	T28	P8/PO	T8	FGD	FGM
91.	8.62	479.7	40.1	811.	1.79	537.8	1.58	1292.	14878.	3402.
92.	8.62	479.7	38.8	800.	1.76	535.0	1.54	1270.	14427.	3180.
93.	8.62	479.7	36.0	779.	1.70	529.0	1.46	1224.	13454.	2738.
94.	8.62	479.7	29.9	727.	1.58	515.9	1.32	1131.	11335.	1911.
95.	8.62	479.7	22.3	660.	1.44	500.8	1.19	1024.	8957.	1121.

ALT = 20000 MO=0.7

CASE	P2	T2	PE	TE	P28/PO	T28	P8/PO	T8	FGD	FGM
96.	9.37	491.4	42.5	822.	1.93	549.1	1.64	1287.	16999.	3716.
97.	9.37	491.4	38.9	795.	1.85	541.6	1.53	1231.	15767.	3103.
98.	9.37	491.4	35.8	770.	1.78	535.2	1.45	1183.	14726.	2640.
99.	9.37	491.4	28.7	714.	1.64	521.7	1.30	1090.	12413.	1770.
100.	9.37	491.4	19.6	644.	1.48	505.6	1.17	979.	9732.	928.

ALT = 20000 MO=0.892

CASE	P2	T2	PE	TE	P28/PO	T28	P8/PO	T8	FGD	FGM
101.	11.33	518.8	47.7	843.	2.27	574.6	1.77	1281.	22175.	4361.
102.	11.33	518.8	41.4	800.	2.13	563.4	1.58	1184.	20106.	3338.
103.	11.33	518.8	37.5	774.	2.05	557.1	1.50	1141.	18903.	2823.
104.	11.33	518.8	33.5	745.	1.97	550.3	1.41	1096.	17642.	2322.
105.	11.33	518.8	23.6	680.	1.79	534.6	1.25	979.	14869.	1327.

ALT = 30000 MO=0.333

CASE	P2	T2	PE	TE	P28/PO	T28	P8/PO	T8	FGD	FGM
106.	4.71	420.9	25.3	759.	1.64	484.6	1.59	1281.	8036.	2271.
107.	4.71	420.9	23.9	741.	1.59	479.1	1.51	1236.	7449.	1973.
108.	4.71	420.9	21.8	713.	1.51	471.5	1.41	1169.	6595.	1611.
109.	4.71	420.9	19.5	683.	1.43	463.4	1.32	1104.	5695.	1271.
110.	4.71	420.9	13.8	603.	1.27	445.2	1.16	977.	3720.	645.

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 30000 MO=0.4

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
111.	6447.	0.492	3169.	1646.	4.47	972.	52.4	5.80	90.4	101.7
112.	5001.	0.489	2446.	1507.	3.77	893.	46.0	6.11	87.6	92.3
113.	4000.	0.498	1992.	1402.	3.29	830.	41.4	6.35	85.8	85.8
114.	3001.	0.519	1556.	1290.	2.78	759.	36.1	6.70	83.7	77.7
115.	1000.	0.746	747.	1051.	1.70	568.	22.5	8.26	76.3	52.6

ALT = 30000 MO=0.5

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
116.	6097.	0.533	3251.	1646.	4.33	969.	54.0	5.92	89.9	100.6
117.	5000.	0.533	2665.	1538.	3.81	912.	49.1	6.17	87.9	93.6
118.	4000.	0.543	2172.	1431.	3.33	855.	44.2	6.46	86.1	87.1
119.	2999.	0.569	1707.	1318.	2.83	789.	38.9	6.83	84.0	79.4
120.	1000.	0.824	824.	1066.	1.74	617.	24.8	8.62	77.0	55.4

ALT = 30000 MO=0.6

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
121.	5843.	0.575	3361.	1648.	4.18	962.	56.2	6.03	89.3	99.3
122.	4999.	0.577	2885.	1563.	3.80	922.	52.3	6.24	87.9	94.2
123.	4000.	0.588	2352.	1455.	3.32	870.	47.2	6.56	86.1	87.9
124.	3000.	0.618	1855.	1342.	2.84	810.	41.7	6.98	84.1	80.4
125.	1000.	0.903	903.	1081.	1.75	657.	27.2	8.93	77.4	57.8

ALT = 30000 MO=0.7

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
126.	5712.	0.616	3517.	1653.	4.04	953.	59.0	6.12	88.8	98.1
127.	5000.	0.619	3094.	1580.	3.73	922.	55.7	6.31	87.7	93.9
128.	4000.	0.632	2528.	1474.	3.27	875.	50.4	6.66	86.0	88.0
129.	3000.	0.667	2000.	1360.	2.80	822.	44.7	7.12	84.1	80.9
130.	1000.	0.983	982.	1095.	1.75	685.	29.6	9.21	77.6	59.9

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 30000 MO=0.4

CASE	P2	T2	PE	TE	P28/PO	T28	P8/PO	T8	FGD	FGM
111.	4.87	424.9	25.9	763.	1.69	488.1	1.61	1280.	8512.	2340.
112.	4.87	424.9	22.8	723.	1.57	477.0	1.45	1184.	7287.	1760.
113.	4.87	424.9	20.4	693.	1.49	468.7	1.36	1116.	6369.	1395.
114.	4.87	424.9	17.7	656.	1.41	459.7	1.27	1048.	5397.	1046.
115.	4.87	424.9	10.9	564.	1.23	439.1	1.11	926.	3164.	411.

ALT = 30000 MO=0.5

CASE	P2	T2	PE	TE	P28/PO	T28	P8/PO	T8	FGD	FGM
116.	5.18	432.4	27.0	769.	1.77	494.7	1.65	1278.	9408.	2470.
117.	5.18	432.4	24.5	739.	1.68	486.2	1.52	1203.	8444.	1999.
118.	5.18	432.4	22.0	708.	1.59	477.7	1.41	1131.	7507.	1594.
119.	5.18	432.4	19.2	673.	1.50	468.6	1.31	1061.	6496.	1215.
120.	5.18	432.4	12.0	579.	1.31	447.6	1.13	926.	4178.	506.

ALT = 30000 MO=0.6

CASE	P2	T2	PE	TE	P28/PO	T28	P8/PO	T8	FGD	FGM
121.	5.57	441.5	28.3	778.	1.88	503.1	1.71	1278.	10532.	2642.
122.	5.57	441.5	26.4	754.	1.81	496.5	1.60	1217.	9770.	2256.
123.	5.57	441.5	23.7	723.	1.71	488.0	1.47	1144.	8817.	1813.
124.	5.57	441.5	20.8	688.	1.62	478.9	1.36	1072.	7780.	1398.
125.	5.57	441.5	13.2	595.	1.41	457.7	1.17	927.	5389.	614.

ALT = 30000 MO=0.7

CASE	P2	T2	PE	TE	P28/PO	T28	P8/PO	T8	FGD	FGM
126.	6.06	452.2	30.1	788.	2.03	513.6	1.78	1279.	11940.	2875.
127.	6.06	452.2	28.3	768.	1.96	508.0	1.68	1226.	11276.	2529.
128.	6.06	452.2	25.5	738.	1.86	499.6	1.54	1153.	10312.	2050.
129.	6.06	452.2	22.4	703.	1.76	490.5	1.42	1079.	9260.	1597.
130.	6.06	452.2	14.4	611.	1.53	469.3	1.20	928.	6807.	738.

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 30000 MO=0.82

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
131.	5637.	0.663	3739.	1660.	3.85	940.	63.1	6.25	88.2	96.3
132.	5000.	0.666	3330.	1593.	3.58	914.	59.9	6.43	87.3	92.8
133.	3999.	0.680	2721.	1488.	3.15	870.	54.4	6.79	85.6	87.2
134.	3000.	0.721	2163.	1376.	2.70	823.	48.4	7.28	83.8	80.6
135.	1000.	1.074	1074.	1109.	1.71	705.	32.7	9.51	77.6	61.4

ALT = 30000 MO=0.9

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
136.	5509.	0.693	3819.	1648.	3.67	926.	65.8	6.36	87.7	94.4
137.	5000.	0.697	3487.	1600.	3.46	906.	62.9	6.53	86.9	91.8
138.	3999.	0.713	2852.	1496.	3.04	864.	57.2	6.91	85.3	86.4
139.	3000.	0.756	2267.	1384.	2.62	819.	50.9	7.41	83.4	79.9
140.	1000.	1.131	1131.	1117.	1.66	710.	34.7	9.70	77.5	61.8

ALT = 30000 MO=0.95

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
141.	5480.	0.712	3902.	1645.	3.57	919.	67.9	6.43	87.3	93.4
142.	5000.	0.716	3579.	1599.	3.38	901.	65.1	6.58	86.6	91.0
143.	4000.	0.734	2938.	1502.	2.97	860.	58.9	7.00	85.0	85.7
144.	2999.	0.778	2333.	1388.	2.56	815.	52.6	7.50	83.2	79.4
145.	1000.	1.161	1161.	1121.	1.62	709.	35.9	9.83	77.3	61.6

ALT = 35000 MO=0.374

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
146.	5682.	0.475	2700.	1642.	4.84	1002.	44.3	5.64	91.7	106.3
147.	5000.	0.469	2343.	1563.	4.38	959.	41.0	5.86	89.9	100.1
148.	4000.	0.471	1886.	1446.	3.78	888.	36.7	6.10	87.6	92.2
149.	3000.	0.485	1456.	1320.	3.17	807.	32.0	6.41	85.3	83.8
150.	1000.	0.661	661.	1039.	1.85	586.	19.5	7.81	77.5	56.5

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 30000 MO=0.82

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
131.	6.79	467.3	32.6	801.	2.24	528.1	1.88	1283.	14026.	3215.
132.	6.79	467.3	30.9	784.	2.17	523.2	1.78	1233.	13408.	2875.
133.	6.79	467.3	27.8	754.	2.07	515.1	1.63	1159.	12396.	2351.
134.	6.79	467.3	24.5	720.	1.96	506.3	1.50	1084.	11302.	1856.
135.	6.79	467.3	16.0	631.	1.71	485.1	1.25	929.	8801.	906.

ALT = 30000 MO=0.9

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
136.	7.38	478.7	34.2	809.	2.39	538.2	1.94	1271.	15573.	3420.
137.	7.38	478.7	32.7	794.	2.34	534.3	1.86	1236.	15068.	3124.
138.	7.38	478.7	29.5	765.	2.24	526.3	1.70	1163.	14019.	2567.
139.	7.38	478.7	26.0	731.	2.12	517.7	1.55	1087.	12881.	2040.
140.	7.38	478.7	17.1	645.	1.86	496.9	1.29	930.	10310.	1029.

ALT = 30000 MO=0.95

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
141.	7.80	486.3	35.5	815.	2.51	545.3	2.00	1268.	16708.	3583.
142.	7.80	486.3	34.0	801.	2.46	541.7	1.91	1234.	16218.	3295.
143.	7.80	486.3	30.6	771.	2.35	533.8	1.74	1166.	15145.	2709.
144.	7.80	486.3	27.0	738.	2.23	525.3	1.59	1089.	13974.	2164.
145.	7.80	486.3	17.8	653.	1.96	504.7	1.32	930.	11325.	1107.

ALT = 35000 MO=0.374

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
146.	3.81	404.9	21.5	748.	1.71	470.0	1.68	1271.	6959.	2049.
147.	3.81	404.9	19.9	724.	1.65	463.8	1.57	1216.	6446.	1739.
148.	3.81	404.9	17.9	691.	1.55	454.7	1.44	1136.	5590.	1358.
149.	3.81	404.9	15.5	654.	1.45	444.7	1.32	1055.	4673.	1006.
150.	3.81	404.9	9.2	550.	1.23	421.2	1.12	903.	2575.	369.

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 35000 MO=0.4

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
151.	5592.	0.486	2717.	1642.	4.81	1001.	44.6	5.66	91.6	106.1
152.	5000.	0.480	2399.	1573.	4.41	965.	41.7	5.86	90.0	100.6
153.	4000.	0.483	1931.	1455.	3.80	895.	37.3	6.12	87.7	92.7
154.	3000.	0.497	1491.	1328.	3.19	815.	32.5	6.44	85.4	84.2
155.	1000.	0.678	677.	1043.	1.86	599.	20.0	7.90	77.7	57.2

ALT = 35000 MO=0.5

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
156.	5297.	0.526	2788.	1643.	4.66	995.	46.0	5.76	91.1	105.0
157.	5000.	0.523	2615.	1606.	4.46	978.	44.5	5.87	90.3	102.3
158.	4000.	0.525	2102.	1486.	3.84	914.	39.8	6.18	88.0	93.9
159.	3000.	0.541	1624.	1355.	3.23	841.	34.8	6.56	85.6	85.6
160.	1000.	0.743	744.	1059.	1.89	645.	21.8	8.24	78.2	59.5

ALT = 35000 MO=0.6

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
161.	5093.	0.566	2881.	1643.	4.50	986.	47.7	5.87	90.5	103.4
162.	4000.	0.567	2268.	1510.	3.83	924.	42.4	6.25	88.0	94.5
163.	3000.	0.586	1757.	1378.	3.22	857.	37.2	6.67	85.7	86.4
164.	2000.	0.640	1280.	1238.	2.60	778.	31.2	7.29	82.9	76.2
165.	1000.	0.809	809.	1074.	1.90	681.	23.7	8.54	78.5	61.6

ALT = 35000 MO=0.7

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
166.	4960.	0.602	2985.	1643.	4.30	975.	49.8	5.99	89.8	101.4
167.	4000.	0.607	2426.	1526.	3.76	923.	45.1	6.31	87.8	94.2
168.	3000.	0.629	1888.	1396.	3.18	864.	39.7	6.78	85.6	86.6
169.	2000.	0.692	1385.	1256.	2.57	793.	33.6	7.44	82.9	76.9
170.	1000.	0.876	876.	1088.	1.89	706.	25.7	8.81	78.7	63.2

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 35000 MO=0.4

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
151.	3.86	406.5	21.7	749.	1.73	471.4	1.69	1270.	7113.	2073.
152.	3.86	406.5	20.3	728.	1.68	466.0	1.59	1222.	6666.	1798.
153.	3.86	406.5	18.2	695.	1.58	456.8	1.46	1142.	5808.	1406.
154.	3.86	406.5	15.8	658.	1.47	446.7	1.34	1059.	4886.	1043.
155.	3.86	406.5	9.5	553.	1.25	423.0	1.13	903.	2762.	388.

ALT = 35000 MO=0.5

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
156.	4.10	413.6	22.5	755.	1.82	477.8	1.74	1269.	7817.	2184.
157.	4.10	413.6	21.8	744.	1.79	475.1	1.68	1244.	7590.	2034.
158.	4.10	413.6	19.5	710.	1.68	465.6	1.52	1160.	6727.	1596.
159.	4.10	413.6	17.0	673.	1.57	455.3	1.39	1073.	5783.	1193.
160.	4.10	413.6	10.4	568.	1.34	431.1	1.16	906.	3579.	469.

ALT = 35000 MO=0.6

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
161.	4.41	422.3	23.6	762.	1.93	486.0	1.79	1268.	8719.	2327.
162.	4.41	422.3	21.0	725.	1.81	475.4	1.60	1173.	7780.	1799.
163.	4.41	422.3	18.3	687.	1.69	465.1	1.45	1085.	6818.	1359.
164.	4.41	422.3	15.2	641.	1.57	453.7	1.31	998.	5749.	952.
165.	4.41	422.3	11.3	582.	1.44	440.6	1.19	908.	4549.	561.

ALT = 35000 MO=0.7

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
166.	4.80	432.6	24.9	770.	2.07	495.4	1.86	1267.	9843.	2498.
167.	4.80	432.6	22.6	738.	1.96	486.5	1.68	1182.	8973.	2016.
168.	4.80	432.6	19.7	701.	1.84	476.2	1.51	1093.	8000.	1540.
169.	4.80	432.6	16.5	656.	1.71	464.9	1.37	1006.	6905.	1099.
170.	4.80	432.6	12.4	597.	1.56	451.6	1.23	910.	5682.	665.

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 35000 MO=0.82

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
171.	4900.	0.645	3160.	1647.	4.08	961.	53.1	6.14	89.0	99.2
172.	3999.	0.651	2602.	1536.	3.61	915.	48.6	6.42	87.3	93.1
173.	3000.	0.678	2033.	1410.	3.06	860.	42.9	6.91	85.3	85.9
174.	2000.	0.752	1503.	1273.	2.50	798.	36.5	7.61	82.7	76.8
175.	1000.	0.955	955.	1103.	1.84	724.	28.2	9.10	78.6	64.4

ALT = 35000 MO=0.9

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
176.	4901.	0.674	3305.	1651.	3.95	951.	55.9	6.22	88.6	97.8
177.	4000.	0.680	2719.	1540.	3.49	908.	51.1	6.52	87.0	92.0
178.	3000.	0.709	2126.	1415.	2.96	855.	45.1	7.02	84.9	85.1
179.	2000.	0.786	1572.	1278.	2.42	794.	38.5	7.74	82.4	76.3
180.	1000.	1.005	1005.	1110.	1.79	726.	30.0	9.26	78.4	64.5

ALT = 35000 MO=0.95

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
181.	4899.	0.693	3394.	1651.	3.85	944.	57.7	6.27	88.3	96.8
182.	3999.	0.698	2792.	1541.	3.41	902.	52.8	6.58	86.7	91.3
183.	2999.	0.728	2185.	1418.	2.89	850.	46.6	7.10	84.7	84.5
184.	2001.	0.808	1617.	1282.	2.36	792.	39.8	7.84	82.2	75.8
185.	1000.	1.029	1029.	1112.	1.75	725.	31.0	9.38	78.2	64.2

ALT = 40000 MO=0.422

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
186.	4354.	0.496	2162.	1641.	4.79	1000.	35.3	5.72	91.5	105.9
187.	4000.	0.493	1973.	1588.	4.48	973.	33.6	5.87	90.3	101.8
188.	3000.	0.498	1495.	1436.	3.70	886.	29.1	6.23	87.4	91.5
189.	2000.	0.528	1056.	1269.	2.91	781.	24.0	6.70	84.2	80.0
190.	1000.	0.642	642.	1085.	2.06	645.	17.7	7.65	79.3	62.5

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 35000 MO=0.82

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
171.	5.38	447.0	27.0	783.	2.29	509.1	1.97	1268.	11531.	2772.
172.	5.38	447.0	24.6	753.	2.18	501.0	1.79	1186.	10663.	2292.
173.	5.38	447.0	21.5	716.	2.05	491.0	1.60	1098.	9642.	1771.
174.	5.38	447.0	18.1	673.	1.90	480.1	1.44	1011.	8512.	1291.
175.	5.38	447.0	13.7	616.	1.75	466.8	1.28	913.	7271.	807.

ALT = 35000 MO=0.9

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
176.	5.85	457.9	28.6	793.	2.46	519.6	2.06	1270.	12872.	3004.
177.	5.85	457.9	26.1	763.	2.35	511.6	1.86	1188.	11979.	2491.
178.	5.85	457.9	22.8	726.	2.21	501.8	1.66	1100.	10922.	1936.
179.	5.85	457.9	19.2	683.	2.06	491.1	1.49	1012.	9741.	1424.
180.	5.85	457.9	14.6	628.	1.90	478.0	1.32	913.	8467.	912.

ALT = 35000 MO=0.95

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
181.	6.18	465.2	29.7	799.	2.58	526.5	2.12	1269.	13798.	3158.
182.	6.18	465.2	27.1	770.	2.46	518.6	1.91	1187.	12891.	2625.
183.	6.18	465.2	23.7	733.	2.33	509.0	1.71	1100.	11808.	2047.
184.	6.18	465.2	19.9	690.	2.17	498.4	1.52	1012.	10596.	1513.
185.	6.18	465.2	15.2	635.	2.00	485.4	1.35	912.	9280.	977.

ALT = 40000 MO=0.422

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
186.	3.07	403.9	17.2	745.	1.75	468.2	1.70	1269.	5718.	1649.
187.	3.07	403.9	16.3	729.	1.71	464.2	1.63	1232.	5448.	1482.
188.	3.07	403.9	14.2	686.	1.58	452.3	1.45	1129.	4589.	1078.
189.	3.07	403.9	11.6	635.	1.45	439.1	1.29	1023.	3635.	717.
190.	3.07	403.9	8.4	567.	1.30	424.0	1.16	921.	2559.	385.

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 40000 MO=0.5

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
191.	4181.	0.528	2207.	1641.	4.68	995.	36.2	5.79	91.2	105.0
192.	4000.	0.526	2105.	1613.	4.52	982.	35.3	5.88	90.5	103.0
193.	3000.	0.532	1595.	1459.	3.73	901.	30.5	6.29	87.5	92.4
194.	2000.	0.565	1130.	1290.	2.94	803.	25.4	6.81	84.4	81.1
195.	1000.	0.687	687.	1099.	2.08	677.	18.8	7.88	79.6	64.1

ALT = 40000 MO=0.6

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
196.	4018.	0.567	2276.	1641.	4.51	986.	37.6	5.90	90.5	103.5
197.	3499.	0.567	1983.	1563.	4.09	950.	34.9	6.15	88.9	97.9
198.	3000.	0.573	1720.	1482.	3.72	911.	32.6	6.36	87.5	93.0
199.	2000.	0.611	1223.	1312.	2.94	822.	27.2	6.95	84.5	82.1
200.	1000.	0.749	749.	1117.	2.09	709.	20.4	8.14	79.9	66.0

ALT = 40000 MO=0.7

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
201.	3917.	0.602	2359.	1641.	4.32	975.	39.3	6.02	89.8	101.5
202.	3500.	0.605	2117.	1578.	4.01	947.	37.2	6.20	88.6	97.5
203.	3000.	0.613	1840.	1498.	3.65	912.	34.7	6.42	87.4	92.8
204.	2000.	0.657	1314.	1329.	2.90	833.	29.1	7.08	84.5	82.5
205.	1000.	0.813	813.	1134.	2.08	731.	22.1	8.35	80.0	67.3

ALT = 40000 MO=0.82

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
206.	3864.	0.644	2489.	1643.	4.09	961.	41.8	6.16	89.0	99.2
207.	3500.	0.649	2270.	1588.	3.85	938.	40.0	6.30	88.2	96.1
208.	2999.	0.658	1973.	1508.	3.51	905.	37.4	6.53	87.0	91.8
209.	1999.	0.708	1416.	1341.	2.80	832.	31.5	7.22	84.2	82.0
210.	1000.	0.888	888.	1151.	2.04	745.	24.3	8.57	79.9	68.1

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 40000 MO=0.5

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
191.	3.23	409.5	17.7	750.	1.82	473.3	1.74	1269.	6162.	1720.
192.	3.23	409.5	17.3	741.	1.80	471.2	1.69	1249.	6024.	1629.
193.	3.23	409.5	15.0	698.	1.66	459.1	1.50	1142.	5159.	1191.
194.	3.23	409.5	12.3	647.	1.52	445.8	1.33	1033.	4184.	801.
195.	3.23	409.5	9.0	579.	1.37	430.4	1.18	925.	3079.	440.

ALT = 40000 MO=0.6

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
196.	3.47	418.2	18.6	757.	1.93	481.3	1.79	1267.	6869.	1832.
197.	3.47	418.2	17.3	734.	1.86	475.0	1.67	1211.	6442.	1569.
198.	3.47	418.2	16.1	712.	1.79	468.9	1.57	1155.	5984.	1345.
199.	3.47	418.2	13.3	661.	1.64	455.5	1.38	1043.	4988.	918.
200.	3.47	418.2	9.8	593.	1.47	439.9	1.22	930.	3850.	520.

ALT = 40000 MO=0.7

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
201.	3.77	428.3	19.6	765.	2.08	490.8	1.86	1266.	7756.	1968.
202.	3.77	428.3	18.6	747.	2.02	485.9	1.76	1220.	7389.	1752.
203.	3.77	428.3	17.3	725.	1.94	479.9	1.65	1163.	6920.	1510.
204.	3.77	428.3	14.4	675.	1.78	466.5	1.44	1049.	5913.	1046.
205.	3.77	428.3	10.7	609.	1.60	451.0	1.26	934.	4742.	613.

ALT = 40000 MO=0.82

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
206.	4.23	442.6	21.2	777.	2.29	504.2	1.97	1266.	9079.	2180.
207.	4.23	442.6	20.3	762.	2.24	500.2	1.87	1225.	8730.	1986.
208.	4.23	442.6	18.9	740.	2.16	494.3	1.75	1166.	8241.	1720.
209.	4.23	442.6	15.7	691.	1.99	481.3	1.52	1053.	7187.	1212.
210.	4.23	442.6	11.8	627.	1.79	466.1	1.32	939.	5992.	739.

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 40000 MO=0.9

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
211.	3870.	0.673	2606.	1647.	3.96	951.	44.0	6.24	88.6	97.9
212.	3000.	0.687	2062.	1512.	3.40	897.	39.4	6.63	86.6	90.8
213.	2499.	0.707	1767.	1433.	3.06	864.	36.4	6.95	85.3	86.4
214.	2000.	0.741	1482.	1348.	2.72	827.	33.2	7.35	83.9	81.3
215.	1000.	0.931	931.	1157.	1.98	745.	25.7	8.73	79.7	67.9

ALT = 40000 MO=0.95

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
216.	3872.	0.692	2679.	1648.	3.87	945.	45.5	6.29	88.3	96.9
217.	2999.	0.706	2118.	1514.	3.32	892.	40.7	6.70	86.3	90.1
218.	2499.	0.726	1815.	1436.	2.99	859.	37.6	7.03	85.0	85.7
219.	2000.	0.762	1524.	1351.	2.65	824.	34.3	7.43	83.6	80.8
220.	1000.	0.953	953.	1159.	1.93	744.	26.5	8.85	79.4	67.6

ALT = 45000 MO=0.475

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
221.	3253.	0.524	1706.	1640.	4.63	989.	27.7	5.85	90.9	104.2
222.	3000.	0.522	1566.	1592.	4.35	965.	26.4	6.01	89.7	100.4
223.	2500.	0.528	1319.	1495.	3.86	911.	24.1	6.24	87.9	93.9
224.	2000.	0.540	1080.	1389.	3.36	852.	21.7	6.52	86.1	87.4
225.	1000.	0.637	637.	1161.	2.32	706.	16.0	7.47	81.2	69.2

ALT = 45000 MO=0.6

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
226.	3085.	0.574	1770.	1640.	4.42	979.	28.9	5.99	90.1	102.3
227.	2500.	0.580	1449.	1525.	3.85	925.	26.1	6.32	88.0	94.7
228.	2000.	0.595	1190.	1418.	3.36	872.	23.6	6.65	86.2	88.4
229.	1500.	0.630	945.	1306.	2.87	812.	20.8	7.07	84.2	80.8
230.	500.	0.943	472.	1048.	1.76	657.	13.5	9.04	77.4	58.0

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 40000 MO=0.9

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
211.	4.60	453.4	22.5	787.	2.46	514.6	2.06	1268.	10138.	2365.
212.	4.60	453.4	20.0	750.	2.32	504.8	1.82	1167.	9271.	1873.
213.	4.60	453.4	18.4	727.	2.24	498.7	1.70	1112.	8741.	1595.
214.	4.60	453.4	16.7	701.	2.15	492.1	1.58	1055.	8177.	1331.
215.	4.60	453.4	12.6	638.	1.94	477.2	1.37	939.	6935.	826.

ALT = 40000 MO=0.95

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
216.	4.86	460.6	23.4	793.	2.58	521.5	2.12	1268.	10869.	2489.
217.	4.86	460.6	20.8	757.	2.44	511.8	1.87	1168.	9984.	1973.
218.	4.86	460.6	19.1	734.	2.35	505.7	1.74	1113.	9443.	1685.
219.	4.86	460.6	17.3	708.	2.26	499.3	1.62	1056.	8862.	1411.
220.	4.86	460.6	13.0	644.	2.05	484.4	1.39	938.	7587.	882.

ALT = 45000 MO=0.475

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
221.	2.50	407.6	13.6	745.	1.78	470.5	1.70	1271.	4671.	1292.
222.	2.50	407.6	13.0	731.	1.75	466.6	1.63	1237.	4475.	1169.
223.	2.50	407.6	11.9	704.	1.66	459.1	1.51	1170.	4035.	962.
224.	2.50	407.6	10.7	674.	1.57	451.0	1.40	1099.	3571.	764.
225.	2.50	407.6	7.7	597.	1.39	432.8	1.21	963.	2530.	404.

ALT = 45000 MO=0.6

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
226.	2.73	418.2	14.4	754.	1.92	480.2	1.77	1269.	5345.	1396.
227.	2.73	418.2	13.0	722.	1.82	471.2	1.60	1187.	4835.	1118.
228.	2.73	418.2	11.7	692.	1.72	463.0	1.48	1114.	4360.	897.
229.	2.73	418.2	10.2	657.	1.62	454.1	1.37	1043.	3843.	691.
230.	2.73	418.2	6.5	567.	1.41	433.7	1.17	898.	2651.	302.

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 45000 MO=0.7

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
231.	3005.	0.610	1832.	1639.	4.24	968.	30.2	6.12	89.5	100.4
232.	2499.	0.619	1547.	1540.	3.78	924.	27.8	6.38	87.8	94.4
233.	2000.	0.638	1276.	1436.	3.31	877.	25.2	6.74	86.1	88.4
234.	1500.	0.677	1016.	1323.	2.83	824.	22.3	7.21	84.1	81.3
235.	500.	1.022	511.	1061.	1.75	685.	14.7	9.33	77.6	60.0

ALT = 45000 MO=0.82

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
236.	2967.	0.653	1938.	1643.	4.03	954.	32.3	6.24	88.8	98.4
237.	2499.	0.663	1657.	1549.	3.63	916.	30.0	6.49	87.4	93.3
238.	2000.	0.685	1370.	1447.	3.19	872.	27.2	6.86	85.7	87.6
239.	1500.	0.730	1096.	1336.	2.74	824.	24.2	7.36	83.8	80.9
240.	500.	1.112	556.	1072.	1.71	705.	16.3	9.62	77.6	61.5

ALT = 45000 MO=0.9

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
241.	2968.	0.682	2024.	1646.	3.90	945.	34.0	6.32	88.3	97.0
242.	2500.	0.692	1730.	1553.	3.51	908.	31.5	6.58	87.0	92.2
243.	2000.	0.715	1431.	1452.	3.09	866.	28.6	6.97	85.4	86.7
244.	1500.	0.764	1146.	1343.	2.65	819.	25.4	7.48	83.5	80.2
245.	500.	1.169	584.	1078.	1.67	710.	17.3	9.80	77.5	61.8

ALT = 45000 MO=0.95

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
246.	2969.	0.700	2079.	1647.	3.81	938.	35.1	6.37	88.1	96.1
247.	2500.	0.710	1776.	1554.	3.43	902.	32.6	6.65	86.7	91.4
248.	2000.	0.735	1470.	1454.	3.01	861.	29.5	7.05	85.1	86.1
249.	1500.	0.785	1178.	1346.	2.59	816.	26.3	7.57	83.3	79.7
250.	500.	1.198	599.	1080.	1.63	709.	17.9	9.92	77.3	61.7

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 45000 MO=0.7

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
231.	2.97	428.3	15.2	762.	2.06	489.6	1.83	1267.	6039.	1500.
232.	2.97	428.3	14.0	735.	1.97	482.1	1.69	1195.	5572.	1253.
233.	2.97	428.3	12.6	705.	1.87	473.9	1.55	1122.	5092.	1014.
234.	2.97	428.3	11.0	671.	1.76	465.1	1.43	1049.	4568.	789.
235.	2.97	428.3	7.1	582.	1.53	444.6	1.20	899.	3345.	362.

ALT = 45000 MO=0.82

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
236.	3.33	442.6	16.5	774.	2.28	503.2	1.94	1267.	7071.	1671.
237.	3.33	442.6	15.2	749.	2.18	496.4	1.79	1198.	6618.	1423.
238.	3.33	442.6	13.7	721.	2.08	488.5	1.64	1127.	6113.	1162.
239.	3.33	442.6	12.1	687.	1.97	480.0	1.50	1053.	5568.	916.
240.	3.33	442.6	7.9	601.	1.72	459.6	1.25	898.	4321.	444.

ALT = 45000 MO=0.9

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
241.	3.62	453.4	17.5	784.	2.45	513.6	2.03	1268.	7897.	1812.
242.	3.62	453.4	16.1	759.	2.35	506.9	1.87	1199.	7432.	1547.
243.	3.62	453.4	14.5	731.	2.24	499.2	1.70	1127.	6909.	1269.
244.	3.62	453.4	12.8	697.	2.13	490.9	1.56	1054.	6342.	1006.
245.	3.62	453.4	8.4	613.	1.86	470.8	1.29	897.	5060.	504.

ALT = 45000 MO=0.95

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
246.	3.82	460.6	18.2	790.	2.57	520.4	2.09	1268.	8469.	1907.
247.	3.82	460.6	16.7	766.	2.47	513.9	1.92	1199.	7996.	1629.
248.	3.82	460.6	15.1	737.	2.36	506.2	1.75	1127.	7461.	1340.
249.	3.82	460.6	13.3	703.	2.24	498.0	1.59	1055.	6878.	1067.
250.	3.82	460.6	8.7	620.	1.97	478.1	1.32	896.	5557.	543.

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 50000 MO=0.536

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
251.	2421.	0.558	1350.	1640.	4.43	976.	21.7	6.02	90.1	102.0
252.	2000.	0.563	1125.	1535.	3.90	923.	19.7	6.31	88.1	95.0
253.	1500.	0.582	873.	1398.	3.27	852.	17.3	6.70	85.8	86.6
254.	1000.	0.636	636.	1252.	2.62	767.	14.4	7.31	82.9	76.0
255.	500.	0.817	408.	1087.	1.91	660.	10.9	8.48	78.4	60.7

ALT = 50000 MO=0.6

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
256.	2362.	0.583	1377.	1640.	4.32	971.	22.2	6.10	89.7	101.0
257.	2000.	0.589	1178.	1549.	3.89	928.	20.5	6.35	88.1	95.2
258.	1500.	0.610	916.	1411.	3.26	861.	18.0	6.77	85.8	87.0
259.	1000.	0.671	671.	1266.	2.62	781.	15.1	7.40	83.0	76.7
260.	500.	0.861	430.	1095.	1.91	682.	11.5	8.67	78.6	61.9

ALT = 50000 MO=0.7

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
261.	2300.	0.621	1427.	1640.	4.15	960.	23.2	6.22	89.1	99.3
262.	2000.	0.629	1257.	1564.	3.81	926.	21.9	6.41	87.9	94.9
263.	1500.	0.655	982.	1429.	3.22	867.	19.2	6.88	85.7	87.1
264.	1000.	0.724	724.	1283.	2.60	795.	16.2	7.55	83.0	77.3
265.	500.	0.929	465.	1108.	1.90	707.	12.4	8.95	78.7	63.5

ALT = 50000 MO=0.82

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
266.	2270.	0.665	1509.	1642.	3.96	947.	24.9	6.33	88.5	97.4
267.	2000.	0.673	1345.	1573.	3.66	918.	23.6	6.51	87.5	93.7
268.	1500.	0.703	1055.	1441.	3.10	862.	20.8	7.00	85.3	86.4
269.	1000.	0.784	784.	1298.	2.52	799.	17.7	7.72	82.7	77.2
270.	500.	1.011	505.	1122.	1.85	724.	13.6	9.23	78.6	64.6

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 50000 MO=0.536

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
251.	2.05	412.5	10.8	746.	1.83	473.6	1.70	1272.	3863.	1016.
252.	2.05	412.5	9.8	717.	1.74	465.5	1.56	1198.	3498.	827.
253.	2.05	412.5	8.5	679.	1.62	455.0	1.42	1106.	3026.	619.
254.	2.05	412.5	7.0	631.	1.50	443.5	1.29	1016.	2505.	426.
255.	2.05	412.5	5.2	571.	1.37	430.4	1.17	925.	1917.	246.

ALT = 50000 MO=0.6

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
256.	2.15	418.2	11.1	751.	1.91	478.9	1.74	1271.	4154.	1060.
257.	2.15	418.2	10.3	726.	1.83	471.9	1.61	1206.	3833.	892.
258.	2.15	418.2	9.0	688.	1.70	461.4	1.46	1112.	3356.	672.
259.	2.15	418.2	7.4	640.	1.58	449.8	1.32	1022.	2825.	469.
260.	2.15	418.2	5.5	580.	1.44	436.6	1.19	926.	2228.	275.

ALT = 50000 MO=0.7

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
261.	2.33	428.3	11.8	760.	2.05	488.4	1.80	1270.	4694.	1142.
262.	2.33	428.3	11.0	739.	1.98	482.8	1.69	1214.	4414.	998.
263.	2.33	428.3	9.6	701.	1.85	472.3	1.52	1121.	3931.	760.
264.	2.33	428.3	8.0	655.	1.71	460.9	1.37	1028.	3388.	540.
265.	2.33	428.3	6.0	595.	1.57	447.4	1.23	928.	2778.	325.

ALT = 50000 MO=0.82

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
266.	2.62	442.6	12.8	772.	2.26	502.1	1.91	1269.	5499.	1276.
267.	2.62	442.6	12.0	753.	2.19	497.1	1.80	1218.	5237.	1133.
268.	2.62	442.6	10.5	716.	2.06	487.0	1.61	1125.	4729.	873.
269.	2.62	442.6	8.8	671.	1.91	475.9	1.44	1033.	4168.	633.
270.	2.62	442.6	6.7	613.	1.75	462.4	1.28	930.	3550.	394.

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 50000 MO=0.9

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
271.	2268.	0.694	1573.	1644.	3.82	937.	26.2	6.41	88.1	96.1
272.	2000.	0.702	1403.	1576.	3.54	910.	24.8	6.61	87.1	92.6
273.	1500.	0.734	1102.	1445.	3.00	857.	21.9	7.11	85.0	85.6
274.	1000.	0.819	819.	1303.	2.44	796.	18.6	7.85	82.4	76.6
275.	500.	1.062	531.	1128.	1.80	726.	14.5	9.39	78.4	64.6

ALT = 50000 MO=0.95

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
276.	2268.	0.712	1615.	1645.	3.74	930.	27.1	6.47	87.8	95.2
277.	2000.	0.720	1440.	1576.	3.46	905.	25.6	6.67	86.8	91.8
278.	1500.	0.754	1131.	1446.	2.93	852.	22.6	7.19	84.8	84.9
279.	1000.	0.842	842.	1306.	2.39	793.	19.2	7.94	82.2	76.1
280.	500.	1.087	543.	1129.	1.76	725.	15.0	9.51	78.2	64.4

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 50000 MO=0.9

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
271.	2.85	453.4	13.5	781.	2.43	512.4	2.00	1268.	6143.	1383.
272.	2.85	453.4	12.7	763.	2.36	507.5	1.88	1218.	5877.	1231.
273.	2.85	453.4	11.2	726.	2.22	497.6	1.67	1125.	5353.	955.
274.	2.85	453.4	9.3	681.	2.07	486.7	1.49	1033.	4766.	698.
275.	2.85	453.4	7.1	625.	1.90	473.5	1.32	929.	4131.	445.

ALT = 50000 MO=0.95

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
276.	3.01	460.6	14.0	788.	2.55	519.3	2.05	1268.	6591.	1455.
277.	3.01	460.6	13.2	769.	2.48	514.4	1.93	1217.	6321.	1296.
278.	3.01	460.6	11.6	732.	2.34	504.7	1.72	1124.	5784.	1009.
279.	3.01	460.6	9.7	688.	2.18	494.0	1.53	1033.	5182.	742.
280.	3.01	460.6	7.4	632.	2.01	480.8	1.35	927.	4526.	477.

FAN A

INSTALLATION EFFECTS

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NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = SEA LEVEL MO = 0

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
1.	22003.	0.358	7881.	1691.	3.53	827.	130.5	5.33	88.7	90.0
2.	20776.	0.372	7726.	1692.	3.53	816.	127.8	5.26	88.7	89.6
3.	21798.	0.360	7849.	1692.	3.50	824.	130.6	5.31	88.7	89.7
4.	22051.	0.359	7924.	1696.	3.53	827.	130.5	5.34	88.7	90.1
5.	20620.	0.375	7733.	1697.	3.50	814.	128.0	5.24	88.7	89.4

ALT = SEA LEVEL MO = 0.25

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
6.	16155.	0.473	7636.	1680.	3.39	828.	131.5	5.53	88.2	89.0
7.	15141.	0.495	7491.	1681.	3.39	819.	128.9	5.46	88.2	88.6
8.	15962.	0.476	7597.	1681.	3.36	825.	131.6	5.51	88.2	88.7
9.	16198.	0.474	7677.	1685.	3.39	828.	131.5	5.54	88.2	89.1
10.	14994.	0.500	7492.	1686.	3.37	817.	129.0	5.44	88.2	88.4

ALT = SEA LEVEL MO = 0.4

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
11.	13500.	0.555	7495.	1663.	3.18	825.	132.9	5.82	87.4	87.3
12.	12596.	0.585	7363.	1665.	3.19	818.	130.3	5.76	87.4	87.1
13.	13330.	0.560	7465.	1665.	3.16	823.	133.0	5.80	87.4	87.1
14.	13541.	0.557	7537.	1667.	3.19	825.	132.9	5.83	87.4	87.4
15.	12465.	0.591	7362.	1669.	3.17	817.	130.4	5.75	87.4	86.8

ALT = 10000 MO = 0

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
16.	18050.	0.354	6390.	1684.	4.06	898.	103.8	5.17	90.8	96.8
17.	17161.	0.365	6267.	1685.	4.06	890.	101.7	5.11	90.8	96.6
18.	17837.	0.356	6354.	1685.	4.02	894.	103.9	5.14	90.8	96.5
19.	18094.	0.356	6435.	1690.	4.06	899.	103.7	5.17	90.8	97.0
20.	17013.	0.369	6276.	1693.	4.03	888.	101.8	5.09	90.8	96.3

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = SEA LEVEL MO = 0

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
1.	14.70	518.7	65.5	902.	1.39	581.3	1.36	1359.	17207.	4796.
2.	14.40	518.7	64.2	902.	1.37	581.6	1.34	1362.	16150.	4626.
3.	14.70	518.7	64.8	900.	1.39	580.8	1.35	1361.	17065.	4733.
4.	14.70	518.7	65.5	902.	1.39	581.4	1.36	1362.	17244.	4807.
5.	14.40	518.7	63.6	900.	1.36	581.2	1.34	1368.	16045.	4574.

ALT = SEA LEVEL MO = 0.25

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
6.	15.35	525.2	66.2	903.	1.43	585.4	1.36	1350.	18766.	4845.
7.	15.04	525.2	64.9	903.	1.41	585.6	1.35	1353.	17694.	4678.
8.	15.35	525.2	65.6	901.	1.43	584.8	1.36	1351.	18617.	4778.
9.	15.35	525.2	66.3	904.	1.44	585.5	1.36	1353.	18803.	4857.
10.	15.04	525.2	64.4	902.	1.40	585.1	1.34	1359.	17585.	4622.

ALT = SEA LEVEL MO = 0.4

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
11.	16.41	535.3	67.3	905.	1.50	592.1	1.37	1335.	21182.	4910.
12.	16.08	535.3	66.0	906.	1.47	592.2	1.35	1340.	20091.	4747.
13.	16.41	535.3	66.7	904.	1.49	591.7	1.36	1338.	21042.	4845.
14.	16.41	535.3	67.4	906.	1.50	592.3	1.37	1339.	21219.	4922.
15.	16.08	535.3	65.5	904.	1.47	591.8	1.35	1344.	19993.	4690.

ALT = 10000 MO = 0

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
16.	10.11	483.0	50.5	874.	1.47	550.8	1.46	1334.	13843.	4207.
17.	9.90	483.0	49.5	875.	1.44	551.0	1.44	1337.	13099.	4062.
18.	10.11	483.0	49.9	872.	1.46	550.2	1.45	1336.	13701.	4136.
19.	10.11	483.0	50.6	875.	1.47	551.0	1.46	1339.	13873.	4221.
20.	9.90	483.0	49.0	872.	1.44	550.6	1.44	1344.	13007.	4006.

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = 10000 MO = 0.25

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
21.	13588.	0.455	6189.	1673.	3.90	894.	104.5	5.32	90.2	95.6
22.	12849.	0.473	6072.	1674.	3.90	887.	102.5	5.28	90.2	95.4
23.	13415.	0.459	6161.	1675.	3.86	891.	104.7	5.30	90.2	95.3
24.	13632.	0.457	6231.	1678.	3.90	895.	104.5	5.33	90.2	95.7
25.	12719.	0.478	6085.	1682.	3.87	885.	102.6	5.26	90.2	95.1

ALT = 10000 MO = 0.6

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
26.	9179.	0.640	5870.	1617.	3.21	859.	107.5	6.02	87.6	89.8
27.	8574.	0.672	5764.	1618.	3.22	856.	105.4	5.99	87.6	89.6
28.	9016.	0.647	5836.	1618.	3.18	856.	107.6	5.99	87.6	89.5
29.	9219.	0.641	5911.	1622.	3.22	860.	107.5	6.02	87.6	89.9
30.	8450.	0.683	5771.	1625.	3.19	854.	105.4	5.97	87.6	89.4

ALT = 20000 MO = 0.4

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
31.	8314.	0.504	4190.	1577.	3.86	907.	76.3	5.47	90.1	96.0
32.	7854.	0.524	4112.	1578.	3.87	902.	74.8	5.43	90.1	95.8
33.	8147.	0.510	4156.	1578.	3.81	903.	76.4	5.43	90.1	95.6
34.	8357.	0.506	4231.	1585.	3.87	908.	76.2	5.48	90.1	96.2
35.	7735.	0.533	4124.	1589.	3.82	900.	74.9	5.41	90.1	95.5

ALT = 20000 MO = 0.6

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
36.	7296.	0.602	4390.	1577.	3.58	898.	81.1	5.76	89.1	94.1
37.	6865.	0.628	4311.	1579.	3.59	896.	79.4	5.74	89.1	94.0
38.	7137.	0.611	4358.	1579.	3.53	895.	81.1	5.72	89.1	93.7
39.	7337.	0.604	4431.	1585.	3.59	899.	81.0	5.76	89.1	94.3
40.	6746.	0.641	4321.	1589.	3.55	894.	79.5	5.72	89.1	93.7

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = 10000 MO = 0.25

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
21.	10.56	489.1	51.1	876.	1.51	554.6	1.47	1324.	14884.	4242.
22.	10.35	489.1	50.1	876.	1.48	554.8	1.45	1327.	14138.	4099.
23.	10.56	489.1	50.5	873.	1.51	554.0	1.46	1328.	14761.	4174.
24.	10.56	489.1	51.2	876.	1.51	554.8	1.47	1329.	14920.	4255.
25.	10.35	489.1	49.6	874.	1.48	554.3	1.44	1335.	14050.	4044.

ALT = 10000 MO = 0.6

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
26.	12.89	517.9	53.5	882.	1.72	574.3	1.49	1280.	19983.	4355.
27.	12.64	517.9	52.5	882.	1.68	574.3	1.47	1283.	19174.	4212.
28.	12.89	517.9	52.9	879.	1.71	573.7	1.48	1282.	19851.	4283.
29.	12.89	517.9	53.6	882.	1.72	574.5	1.49	1284.	20024.	4369.
30.	12.64	517.9	51.9	880.	1.68	573.8	1.46	1289.	19078.	4154.

ALT = 20000 MO = 0.4

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
31.	7.54	461.7	36.2	827.	1.61	522.8	1.52	1240.	11556.	3119.
32.	7.39	461.7	35.5	827.	1.58	522.9	1.50	1243.	11040.	3018.
33.	7.54	461.7	35.6	824.	1.60	522.0	1.51	1243.	11431.	3049.
34.	7.54	461.7	36.3	828.	1.61	523.1	1.52	1247.	11593.	3133.
35.	7.39	461.7	35.0	825.	1.57	522.3	1.49	1253.	10958.	2963.

ALT = 20000 MO = 0.6

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
36.	8.62	479.7	39.0	843.	1.79	538.8	1.59	1236.	14426.	3465.
37.	8.44	479.7	38.3	843.	1.75	538.7	1.57	1239.	13870.	3356.
38.	8.62	479.7	38.4	840.	1.78	538.1	1.58	1239.	14301.	3393.
39.	8.62	479.7	39.1	843.	1.79	539.1	1.59	1242.	14464.	3479.
40.	8.44	479.7	37.8	840.	1.75	538.2	1.56	1249.	13781.	3298.

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = 20000 MO = 0.7

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
41.	6934.	0.651	4517.	1578.	3.41	888.	84.2	5.90	88.6	92.8
42.	6507.	0.681	4434.	1579.	3.42	887.	82.5	5.90	88.6	92.7
43.	6780.	0.662	4487.	1579.	3.37	885.	84.3	5.88	88.6	92.5
44.	6972.	0.654	4558.	1585.	3.42	888.	84.2	5.91	88.6	92.9
45.	6386.	0.695	4441.	1588.	3.38	885.	82.6	5.88	88.6	92.5

ALT = 30000 MO = 0.4

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
46.	6598.	0.487	3216.	1569.	4.49	969.	57.3	5.20	92.5	103.5
47.	6277.	0.503	3156.	1571.	4.50	966.	56.1	5.18	92.5	103.2
48.	6447.	0.495	3188.	1573.	4.41	965.	57.4	5.16	92.5	102.7
49.	6643.	0.491	3260.	1581.	4.51	971.	57.3	5.21	92.5	103.7
50.	6168.	0.514	3170.	1586.	4.43	964.	56.3	5.15	92.5	102.7

ALT = 30000 MO = 0.6

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
51.	5936.	0.571	3388.	1571.	4.18	954.	61.1	5.41	91.4	100.8
52.	5628.	0.591	3325.	1572.	4.18	953.	59.8	5.41	91.4	100.7
53.	5779.	0.580	3352.	1572.	4.10	950.	61.2	5.38	91.4	100.1
54.	5978.	0.574	3431.	1581.	4.19	955.	61.1	5.42	91.4	101.0
55.	5513.	0.604	3332.	1585.	4.12	951.	59.9	5.39	91.4	100.2

ALT = 30000 MO = 0.82

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
56.	5489.	0.663	3641.	1571.	3.74	923.	67.0	5.70	89.8	96.8
57.	5188.	0.689	3572.	1572.	3.74	922.	65.7	5.70	89.8	96.8
58.	5337.	0.676	3608.	1572.	3.68	919.	67.1	5.67	89.8	96.4
59.	5527.	0.666	3683.	1580.	3.75	924.	67.0	5.71	89.8	97.0
60.	5075.	0.706	3581.	1583.	3.69	920.	65.8	5.67	89.8	96.5

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = 20000 MO = 0.7

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
41.	9.37	491.4	40.9	853.	1.92	549.5	1.64	1234.	16359.	3701.
42.	9.18	491.4	40.1	853.	1.88	549.4	1.61	1237.	15779.	3580.
43.	9.37	491.4	40.3	850.	1.91	548.8	1.62	1237.	16241.	3626.
44.	9.37	491.4	41.0	853.	1.92	549.7	1.64	1240.	16395.	3716.
45.	9.18	491.4	39.6	850.	1.87	548.9	1.60	1245.	15690.	3519.

ALT = 30000 MO = 0.4

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
46.	4.87	424.9	26.2	796.	1.70	490.8	1.68	1222.	8420.	2571.
47.	4.78	424.9	25.7	796.	1.66	490.8	1.66	1224.	8082.	2488.
48.	4.87	424.9	25.7	792.	1.69	489.8	1.66	1226.	8322.	2499.
49.	4.87	424.9	26.3	797.	1.70	491.2	1.69	1231.	8457.	2588.
50.	4.78	424.9	25.3	793.	1.66	490.2	1.64	1238.	8018.	2431.

ALT = 30000 MO = 0.6

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
51.	5.57	441.5	28.5	811.	1.89	505.6	1.77	1220.	10345.	2864.
52.	5.46	441.5	27.9	811.	1.85	505.5	1.74	1222.	9975.	2773.
53.	5.57	441.5	27.9	806.	1.88	504.5	1.75	1222.	10239.	2783.
54.	5.57	441.5	28.6	811.	1.90	505.9	1.78	1228.	10380.	2881.
55.	5.46	441.5	27.4	807.	1.85	504.7	1.73	1234.	9904.	2710.

ALT = 30000 MO = 0.82

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
56.	6.79	467.3	32.0	833.	2.23	528.9	1.92	1218.	13541.	3340.
57.	6.65	467.3	31.3	833.	2.18	528.9	1.89	1219.	13113.	3234.
58.	6.79	467.3	31.4	829.	2.22	528.1	1.90	1220.	13432.	3257.
59.	6.79	467.3	32.1	833.	2.23	529.2	1.93	1225.	13576.	3357.
60.	6.65	467.3	30.8	830.	2.18	528.3	1.87	1229.	13040.	3167.

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = 35000 MO = 0.7

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
61.	5039.	0.599	3018.	1567.	4.30	967.	54.2	5.37	91.9	102.7
62.	4787.	0.619	2961.	1568.	4.31	966.	53.1	5.37	91.9	102.6
63.	4894.	0.610	2987.	1570.	4.22	963.	54.4	5.33	91.9	102.0
64.	5077.	0.603	3059.	1578.	4.32	968.	54.2	5.38	91.9	103.0
65.	4679.	0.635	2971.	1583.	4.24	964.	53.2	5.34	91.9	102.2

ALT = 35000 MO = 0.82

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
66.	4898.	0.644	3156.	1567.	4.05	949.	57.4	5.52	90.9	99.9
67.	4646.	0.666	3094.	1567.	4.05	949.	56.2	5.52	90.9	99.9
68.	4742.	0.658	3121.	1568.	3.97	945.	57.5	5.48	90.9	99.4
69.	4936.	0.648	3198.	1577.	4.06	950.	57.4	5.53	90.9	100.1
70.	4534.	0.684	3102.	1580.	3.99	946.	56.3	5.49	90.9	99.6

ALT = 35000 MO = 0.95

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
71.	4751.	0.698	3314.	1567.	3.75	925.	61.2	5.72	89.8	97.0
72.	4503.	0.722	3250.	1568.	3.75	925.	59.9	5.72	89.8	97.0
73.	4602.	0.712	3279.	1568.	3.68	921.	61.3	5.68	89.8	96.5
74.	4788.	0.701	3356.	1577.	3.76	926.	61.2	5.73	89.8	97.2
75.	4390.	0.742	3256.	1579.	3.69	922.	60.0	5.69	89.8	96.7

ALT = 40000 MO = 0.7

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
76.	3998.	0.600	2398.	1566.	4.34	968.	42.9	5.38	92.0	103.0
77.	3798.	0.620	2353.	1567.	4.34	968.	42.0	5.38	92.0	102.9
78.	3857.	0.614	2370.	1571.	4.23	964.	43.0	5.33	92.0	102.1
79.	4037.	0.604	2437.	1580.	4.35	970.	42.8	5.40	92.0	103.3
80.	3695.	0.640	2364.	1587.	4.25	965.	42.1	5.35	92.0	102.4

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = 35000 MO = 0.7

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
61.	4.80	432.6	25.1	802.	2.08	497.7	1.95	1213.	9632.	2726.
62.	4.70	432.6	24.6	802.	2.04	497.7	1.92	1215.	9316.	2640.
63.	4.80	432.6	24.5	798.	2.07	496.7	1.92	1216.	9539.	2645.
64.	4.80	432.6	25.2	803.	2.09	498.1	1.96	1222.	9664.	2742.
65.	4.70	432.6	24.1	798.	2.03	497.0	1.89	1227.	9254.	2575.

ALT = 35000 MO = 0.82

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
66.	5.38	447.0	26.9	815.	2.29	510.7	2.06	1212.	11197.	2985.
67.	5.27	447.0	26.3	815.	2.25	510.7	2.02	1213.	10853.	2889.
68.	5.38	447.0	26.3	810.	2.28	509.7	2.02	1214.	11089.	2898.
69.	5.38	447.0	27.0	815.	2.30	511.0	2.07	1221.	11228.	3003.
70.	5.27	447.0	25.9	811.	2.24	510.0	1.99	1224.	10785.	2821.

ALT = 35000 MO = 0.95

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
71.	6.18	465.2	29.1	830.	2.57	526.9	2.19	1212.	13257.	3302.
72.	6.06	465.2	28.5	830.	2.52	526.9	2.15	1213.	12872.	3200.
73.	6.18	465.2	28.5	826.	2.55	526.0	2.16	1214.	13154.	3214.
74.	6.18	465.2	29.2	831.	2.57	527.2	2.20	1221.	13291.	3320.
75.	6.06	465.2	28.0	826.	2.51	526.3	2.12	1223.	12802.	3129.

ALT = 40000 MO = 0.7

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
76.	3.77	428.3	19.8	797.	2.09	493.2	1.96	1212.	7605.	2159.
77.	3.70	428.3	19.4	797.	2.05	493.2	1.93	1214.	7354.	2090.
78.	3.77	428.3	19.2	792.	2.07	491.9	1.92	1217.	7515.	2081.
79.	3.77	428.3	19.9	798.	2.09	493.7	1.97	1224.	7638.	2175.
80.	3.70	428.3	18.9	792.	2.04	492.3	1.89	1231.	7297.	2028.

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = 40000 MO = 0.82

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
81.	3890.	0.644	2506.	1565.	4.08	951.	45.4	5.53	91.0	100.2
82.	3691.	0.666	2458.	1566.	4.08	950.	44.4	5.53	91.0	100.2
83.	3737.	0.661	2471.	1567.	3.98	946.	45.5	5.48	91.0	99.5
84.	3926.	0.648	2545.	1579.	4.10	952.	45.4	5.54	91.0	100.4
85.	3576.	0.689	2463.	1582.	4.00	947.	44.5	5.50	91.0	99.7

ALT = 40000 MO = 0.95

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
86.	3773.	0.697	2628.	1565.	3.77	926.	48.3	5.73	89.9	97.2
87.	3576.	0.721	2577.	1566.	3.77	926.	47.4	5.73	89.9	97.2
88.	3629.	0.716	2598.	1568.	3.69	922.	48.4	5.68	89.9	96.6
89.	3810.	0.700	2668.	1578.	3.79	928.	48.3	5.74	89.9	97.4
90.	3468.	0.746	2586.	1582.	3.70	923.	47.4	5.70	89.9	96.8

ALT = 45000 MO = 0.7

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
91.	3083.	0.607	1871.	1565.	4.27	963.	33.2	5.45	91.8	102.1
92.	2927.	0.627	1836.	1566.	4.28	962.	32.5	5.45	91.8	102.1
93.	2947.	0.627	1848.	1574.	4.14	957.	33.3	5.39	91.8	101.1
94.	3128.	0.612	1915.	1586.	4.30	965.	33.2	5.46	91.8	102.6
95.	2830.	0.655	1854.	1596.	4.17	959.	32.6	5.40	91.8	101.4

ALT = 45000 MO = 0.82

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
96.	2994.	0.653	1955.	1566.	4.02	945.	35.1	5.60	90.8	99.5
97.	2838.	0.675	1917.	1566.	4.02	945.	34.4	5.60	90.8	99.5
98.	2849.	0.675	1924.	1571.	3.90	939.	35.2	5.54	90.8	98.7
99.	3034.	0.658	1995.	1583.	4.05	947.	35.1	5.62	90.8	99.8
100.	2731.	0.706	1927.	1591.	3.92	941.	34.5	5.56	90.8	98.9

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = 40000 MO = 0.82

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
81.	4.23	442.6	21.2	809.	2.30	506.0	2.07	1212.	8839.	2366.
82.	4.15	442.6	20.8	809.	2.25	506.0	2.03	1212.	8568.	2289.
83.	4.23	442.6	20.6	804.	2.28	504.8	2.02	1214.	8736.	2278.
84.	4.23	442.6	21.3	810.	2.30	506.5	2.08	1223.	8868.	2383.
85.	4.15	442.6	20.3	805.	2.24	505.2	1.99	1226.	8497.	2220.

ALT = 40000 MO = 0.95

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
86.	4.86	460.6	23.0	824.	2.57	522.1	2.20	1211.	10459.	2615.
87.	4.77	460.6	22.5	824.	2.52	522.0	2.16	1212.	10156.	2534.
88.	4.86	460.6	22.4	819.	2.56	521.0	2.16	1215.	10360.	2530.
89.	4.86	460.6	23.1	825.	2.58	522.4	2.21	1222.	10493.	2633.
90.	4.77	460.6	22.0	820.	2.51	521.3	2.12	1226.	10088.	2465.

ALT = 45000 MO = 0.7

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
91.	2.97	428.3	15.3	796.	2.08	492.4	1.93	1213.	5934.	1657.
92.	2.91	428.3	15.0	796.	2.04	492.3	1.90	1214.	5738.	1604.
93.	2.97	428.3	14.8	789.	2.06	490.8	1.89	1222.	5849.	1581.
94.	2.97	428.3	15.4	797.	2.09	493.0	1.95	1230.	5972.	1677.
95.	2.91	428.3	14.6	790.	2.03	491.3	1.86	1240.	5686.	1544.

ALT = 45000 MO = 0.82

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
96.	3.33	442.6	16.4	808.	2.29	505.2	2.04	1213.	6898.	1813.
97.	3.26	442.6	16.1	808.	2.24	505.2	2.00	1213.	6686.	1753.
98.	3.33	442.6	15.9	801.	2.27	503.7	1.98	1218.	6801.	1730.
99.	3.33	442.6	16.5	809.	2.29	505.7	2.05	1227.	6933.	1831.
100.	3.26	442.6	15.6	802.	2.23	504.1	1.96	1235.	6617.	1690.

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, ICEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = 45000 MO = 0.95

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
101.	2912.	0.706	2055.	1566.	3.73	921.	37.5	5.79	89.8	96.7
102.	2758.	0.731	2015.	1567.	3.73	921.	36.7	5.80	89.8	96.7
103.	2773.	0.731	2028.	1573.	3.63	916.	37.6	5.74	89.8	96.0
104.	2949.	0.710	2094.	1583.	3.75	923.	37.4	5.81	89.8	97.0
105.	2654.	0.764	2026.	1590.	3.64	918.	36.8	5.76	89.8	96.2

ALT = 50000 MO = 0.7

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
106.	2371.	0.616	1461.	1565.	4.20	956.	25.6	5.53	91.6	101.2
107.	2248.	0.638	1433.	1567.	4.20	956.	25.1	5.53	91.6	101.1
108.	2230.	0.644	1435.	1578.	4.03	949.	25.7	5.45	91.6	99.9
109.	2414.	0.623	1504.	1592.	4.24	960.	25.6	5.55	91.6	101.8
110.	2150.	0.675	1451.	1606.	4.06	951.	25.2	5.47	91.6	100.3

ALT = 50000 MO = 0.82

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
111.	2296.	0.663	1523.	1565.	3.95	939.	27.1	5.68	90.6	98.8
112.	2176.	0.687	1495.	1567.	3.95	938.	26.5	5.68	90.6	98.8
113.	2157.	0.694	1497.	1575.	3.80	931.	27.2	5.60	90.6	97.8
114.	2337.	0.669	1564.	1589.	3.98	941.	27.1	5.71	90.6	99.2
115.	2076.	0.728	1511.	1602.	3.83	933.	26.6	5.63	90.6	98.1

ALT = 50000 MO = 0.95

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
116.	2234.	0.717	1602.	1566.	3.67	916.	28.9	5.88	89.6	96.1
117.	2114.	0.743	1571.	1567.	3.67	915.	28.3	5.88	89.6	96.1
118.	2095.	0.751	1574.	1574.	3.53	909.	29.0	5.81	89.6	95.2
119.	2271.	0.722	1641.	1587.	3.69	918.	28.9	5.90	89.6	96.4
120.	2011.	0.787	1583.	1597.	3.55	911.	28.4	5.83	89.6	95.5

NASA QUIET ENGINE FAN A
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = 45000 MO = 0.95

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
101.	3.82	460.6	17.8	823.	2.56	521.4	2.17	1213.	8178.	2012.
102.	3.75	460.6	17.5	823.	2.51	521.3	2.13	1214.	7939.	1949.
103.	3.82	460.6	17.3	817.	2.54	520.0	2.12	1219.	8082.	1930.
104.	3.82	460.6	17.9	824.	2.57	521.8	2.18	1227.	8212.	2030.
105.	3.75	460.6	17.0	818.	2.50	520.5	2.09	1234.	7876.	1883.

ALT = 50000 MO = 0.7

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
106.	2.33	428.3	11.9	794.	2.07	491.4	1.90	1214.	4626.	1266.
107.	2.29	428.3	11.6	794.	2.03	491.3	1.87	1216.	4473.	1224.
108.	2.33	428.3	11.3	786.	2.04	489.2	1.84	1226.	4536.	1187.
109.	2.33	428.3	12.0	796.	2.08	492.2	1.92	1236.	4662.	1285.
110.	2.29	428.3	11.2	787.	2.01	490.0	1.82	1250.	4418.	1164.

ALT = 50000 MO = 0.82

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
111.	2.62	442.6	12.7	806.	2.27	504.3	2.00	1213.	5379.	1383.
112.	2.56	442.6	12.5	807.	2.23	504.2	1.97	1215.	5211.	1339.
113.	2.62	442.6	12.2	798.	2.25	502.3	1.94	1223.	5282.	1305.
114.	2.62	442.6	12.8	808.	2.28	505.0	2.02	1232.	5415.	1401.
115.	2.56	442.6	12.0	800.	2.21	503.0	1.92	1246.	5149.	1279.

ALT = 50000 MO = 0.95

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
116.	3.01	460.6	13.8	822.	2.55	520.4	2.14	1214.	6382.	1538.
117.	2.95	460.6	13.5	822.	2.50	520.4	2.09	1215.	6195.	1489.
118.	3.01	460.6	13.2	814.	2.52	518.7	2.06	1222.	6287.	1455.
119.	3.01	460.6	13.9	823.	2.56	521.1	2.15	1231.	6417.	1556.
120.	2.95	460.6	13.0	815.	2.48	519.3	2.04	1241.	6134.	1423.

FAN B

STANDARD DAY PERFORMANCE

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = SEA LEVEL MO=0

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
1.	21998.	0.367	8069.	1761.	3.69	829.	126.2	5.57	87.8	88.9
2.	20004.	0.362	7232.	1703.	3.44	793.	119.2	5.65	86.8	85.8
3.	17998.	0.359	6454.	1645.	3.20	753.	112.4	5.70	85.8	82.4
4.	16004.	0.354	5668.	1584.	2.95	712.	104.8	5.79	84.7	79.0
5.	14000.	0.354	4951.	1526.	2.70	667.	96.9	5.88	83.4	74.8
6.	12000.	0.355	4260.	1463.	2.46	619.	89.0	5.95	82.1	69.5
7.	9997.	0.360	3596.	1402.	2.21	566.	80.2	6.06	80.3	64.0
8.	8000.	0.371	2967.	1345.	1.96	507.	70.5	6.20	78.3	57.9
9.	6001.	0.397	2384.	1300.	1.71	440.	59.6	6.37	75.8	50.7
10.	4000.	0.453	1810.	1244.	1.47	360.	48.0	6.49	72.3	41.6
11.	2000.	0.609	1218.	1213.	1.23	254.	32.7	6.77	64.7	30.0
12.	1000.	0.798	798.	1120.	1.12	181.	24.0	6.53	52.5	21.8

ALT = SEA LEVEL MO=0.25

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
13.	16134.	0.483	7795.	1747.	3.54	831.	127.2	5.78	87.3	87.5
14.	14997.	0.483	7248.	1709.	3.38	808.	122.5	5.85	86.6	85.5
15.	12001.	0.488	5854.	1603.	2.96	743.	109.5	6.04	84.8	79.3
16.	9000.	0.507	4562.	1494.	2.52	669.	95.1	6.30	82.5	71.4
17.	6000.	0.555	3331.	1377.	2.07	580.	78.8	6.64	79.4	61.3
18.	3001.	0.723	2171.	1274.	1.59	465.	57.8	7.35	74.7	47.5
19.	1000.	1.312	1312.	1191.	1.25	355.	38.0	8.70	67.3	32.2

ALT = SEAL LEVEL MO=0.4

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
20.	13455.	0.564	7586.	1723.	3.32	829.	128.2	6.11	86.4	85.5
21.	12000.	0.569	6831.	1669.	3.10	800.	121.5	6.23	85.5	82.2
22.	9000.	0.593	5335.	1554.	2.65	733.	106.2	6.58	83.4	75.2
23.	6000.	0.655	3931.	1427.	2.18	654.	89.4	7.04	80.6	65.3
24.	3000.	0.857	2573.	1297.	1.68	555.	68.0	7.96	76.4	52.1
25.	1000.	1.571	1572.	1193.	1.30	464.	47.0	9.87	70.2	38.4

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = SEA LEVEL MO=0

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
1.	14.70	518.7	68.5	875.	1.38	579.8	1.38	1414.	17106.	4891.
2.	14.70	518.7	64.6	856.	1.35	575.0	1.33	1376.	15686.	4318.
3.	14.70	518.7	60.8	836.	1.31	570.3	1.29	1340.	14210.	3788.
4.	14.70	518.7	56.6	814.	1.28	565.2	1.25	1303.	12748.	3256.
5.	14.70	518.7	52.1	791.	1.24	560.2	1.21	1269.	11243.	2757.
6.	14.70	518.7	47.5	767.	1.21	554.9	1.17	1234.	9707.	2294.
7.	14.70	518.7	42.7	740.	1.17	549.5	1.14	1202.	8153.	1845.
8.	14.70	518.7	37.6	713.	1.14	543.7	1.11	1178.	6580.	1421.
9.	14.70	518.7	32.1	685.	1.10	537.8	1.08	1168.	4976.	1025.
10.	14.70	518.7	25.8	652.	1.07	531.8	1.05	1150.	3337.	663.
11.	14.70	518.7	18.0	613.	1.03	525.5	1.02	1161.	1683.	317.
12.	14.70	518.7	13.0	579.	1.02	522.1	1.01	1092.	841.	159.

ALT = SEA LEVEL MO=0.25

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
13.	15.35	525.2	69.3	875.	1.42	583.5	1.38	1403.	18673.	4947.
14.	15.35	525.2	66.7	863.	1.40	580.3	1.35	1378.	17720.	4559.
15.	15.35	525.2	59.4	826.	1.33	571.5	1.27	1312.	15119.	3580.
16.	15.35	525.2	51.1	784.	1.27	562.2	1.20	1249.	12366.	2658.
17.	15.35	525.2	42.0	735.	1.20	552.0	1.14	1187.	9425.	1800.
18.	15.35	525.2	31.0	682.	1.13	540.5	1.08	1153.	6198.	990.
19.	15.35	525.2	20.5	629.	1.08	531.5	1.04	1129.	3744.	454.

ALT = SEAL LEVEL MO=0.4

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
20.	16.41	535.3	70.4	876.	1.48	589.6	1.39	1384.	21108.	5002.
21.	16.41	535.3	66.5	857.	1.45	585.1	1.35	1349.	19750.	4458.
22.	16.41	535.3	57.7	815.	1.37	575.3	1.26	1279.	16821.	3366.
23.	16.41	535.3	48.0	766.	1.30	564.6	1.18	1208.	13625.	2361.
24.	16.41	535.3	36.4	712.	1.21	552.6	1.11	1148.	10070.	1396.
25.	16.41	535.3	25.1	657.	1.15	543.0	1.06	1110.	7365.	726.

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = SEA LEVEL MO=0.5

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
26.	11847.	0.626	7410.	1700.	3.12	824.	129.0	6.39	85.7	83.3
27.	11000.	0.631	6944.	1666.	2.99	807.	124.8	6.49	85.1	81.3
28.	9001.	0.653	5878.	1588.	2.69	766.	114.1	6.77	83.7	76.7
29.	6001.	0.727	4360.	1459.	2.22	694.	96.7	7.31	81.0	67.6
30.	3000.	0.960	2879.	1315.	1.73	606.	75.4	8.30	77.2	54.8
31.	1000.	1.764	1765.	1201.	1.32	527.	53.3	10.46	71.6	42.4

ALT = SEA LEVEL MO=0.6

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
32.	10312.	0.695	7169.	1670.	2.89	814.	129.7	6.73	84.8	80.6
33.	10004.	0.699	6993.	1658.	2.84	808.	128.0	6.78	84.6	79.9
34.	8001.	0.735	5882.	1578.	2.54	769.	116.6	7.12	83.0	75.3
35.	6002.	0.799	4798.	1488.	2.23	725.	104.3	7.56	81.2	69.2
36.	3998.	0.938	3750.	1392.	1.91	674.	90.7	8.16	79.0	61.6
37.	2000.	1.312	2624.	1280.	1.55	615.	72.9	9.40	75.7	51.8

ALT = 10000 MO=0

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
38.	18294.	0.365	6680.	1779.	4.28	907.	100.4	5.44	90.0	95.8
39.	15002.	0.351	5260.	1642.	3.68	826.	89.4	5.58	87.7	88.7
40.	12000.	0.343	4113.	1521.	3.15	742.	78.7	5.72	85.5	81.5
41.	9003.	0.342	3081.	1407.	2.60	645.	66.2	5.95	82.7	72.5
42.	6000.	0.357	2141.	1285.	2.05	529.	52.4	6.19	79.0	60.3
43.	3000.	0.432	1295.	1169.	1.52	375.	35.8	6.47	73.1	43.4
44.	1000.	0.678	678.	1078.	1.17	217.	20.3	6.63	58.7	26.1

ALT = 10000 MO=0.25

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
45.	13820.	0.467	6450.	1760.	4.11	904.	101.5	5.59	89.4	94.4
46.	12000.	0.463	5556.	1675.	3.74	856.	94.3	5.71	88.0	90.0
47.	8997.	0.465	4188.	1531.	3.13	767.	81.8	5.94	85.5	81.6
48.	6002.	0.492	2955.	1391.	2.48	661.	66.6	6.34	82.3	70.6
49.	3000.	0.603	1808.	1235.	1.82	521.	48.4	6.96	77.3	54.7
50.	1000.	1.035	1035.	1126.	1.33	384.	31.0	8.18	69.8	36.6

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NC AIR BLEED OR POWER EXTRACTION

ALT = SEA LEVEL MO=0.5

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
26.	17.44	544.7	71.2	874.	1.54	595.6	1.40	1366.	23365.	5040.
27.	17.44	544.7	68.7	863.	1.52	592.8	1.37	1345.	22524.	4701.
28.	17.44	544.7	62.4	834.	1.46	586.1	1.31	1297.	20478.	3910.
29.	17.44	544.7	52.3	786.	1.38	575.4	1.22	1222.	17157.	2793.
30.	17.44	544.7	40.4	733.	1.29	563.3	1.14	1148.	13443.	1729.
31.	17.44	544.7	28.3	677.	1.23	553.2	1.08	1103.	10642.	959.

ALT = SEA LEVEL MO=0.6

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
32.	18.75	556.1	71.9	873.	1.61	603.2	1.40	1344.	26138.	5072.
33.	18.75	556.1	70.9	868.	1.61	602.2	1.39	1337.	25814.	4938.
34.	18.75	556.1	64.1	839.	1.55	595.3	1.32	1288.	23637.	4090.
35.	18.75	556.1	56.9	806.	1.49	588.0	1.26	1235.	21324.	3278.
36.	18.75	556.1	49.0	771.	1.42	580.4	1.20	1182.	18806.	2503.
37.	18.75	556.1	39.2	730.	1.36	571.2	1.14	1126.	16103.	1692.

ALT = 10000 MO=0

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
38.	10.11	483.0	53.0	858.	1.46	549.9	1.49	1408.	13975.	4319.
39.	10.11	483.0	47.0	816.	1.38	539.7	1.37	1314.	11687.	3315.
40.	10.11	483.0	41.1	776.	1.30	530.0	1.28	1238.	9500.	2500.
41.	10.11	483.0	34.4	727.	1.23	519.6	1.19	1175.	7262.	1741.
42.	10.11	483.0	27.2	673.	1.15	508.4	1.12	1116.	4925.	1075.
43.	10.11	483.0	18.6	614.	1.07	496.3	1.05	1074.	2500.	500.
44.	10.11	483.0	10.7	555.	1.02	487.6	1.02	1042.	841.	159.

ALT = 10000 MO=0.25

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
45.	10.56	489.1	53.8	857.	1.50	553.4	1.50	1393.	15050.	4369.
46.	10.56	489.1	49.9	831.	1.45	546.9	1.42	1334.	13599.	3706.
47.	10.56	489.1	42.9	785.	1.36	535.5	1.30	1242.	11048.	2704.
48.	10.56	489.1	34.6	728.	1.26	522.8	1.19	1163.	8329.	1768.
49.	10.56	489.1	25.1	661.	1.16	508.4	1.10	1088.	5302.	929.
50.	10.56	489.1	16.1	600.	1.09	497.1	1.05	1054.	2983.	398.

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 10000 MO=0.4

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
51.	11774.	0.535	6303.	1732.	3.87	896.	102.9	5.82	88.6	92.4
52.	9001.	0.539	4856.	1594.	3.28	822.	90.3	6.13	86.2	84.8
53.	6000.	0.572	3435.	1437.	2.62	726.	74.8	6.61	83.2	74.4
54.	3000.	0.710	2130.	1275.	1.92	603.	55.5	7.50	78.4	58.8
55.	1000.	1.232	1232.	1136.	1.39	488.	37.6	9.15	72.3	42.2

ALT = 10000 MO=0.5

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
56.	10569.	0.587	6201.	1709.	3.66	887.	104.1	6.03	87.8	90.4
57.	8999.	0.592	5326.	1629.	3.31	847.	96.4	6.25	86.5	85.9
58.	6000.	0.630	3778.	1466.	2.66	760.	80.5	6.78	83.5	76.1
59.	3000.	0.787	2361.	1298.	1.96	648.	60.7	7.80	79.0	61.1
60.	1000.	1.379	1378.	1149.	1.42	547.	42.3	9.67	73.4	45.5

ALT = 10000 MO=0.6

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
61.	9445.	0.641	6054.	1681.	3.40	873.	105.2	6.29	86.9	87.8
62.	8000.	0.652	5214.	1604.	3.10	838.	97.7	6.53	85.7	83.6
63.	6001.	0.689	4138.	1494.	2.67	784.	86.5	6.95	83.7	77.2
64.	4000.	0.775	3099.	1375.	2.21	720.	73.8	7.57	81.1	68.6
65.	2000.	1.052	2104.	1250.	1.73	643.	58.1	8.71	77.4	56.7

ALT = 10000 MO=0.729

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
66.	8053.	0.720	5794.	1639.	3.04	849.	106.4	6.69	85.5	84.0
67.	7001.	0.737	5162.	1580.	2.82	825.	100.5	6.92	84.6	80.7
68.	5997.	0.767	4598.	1528.	2.62	800.	94.3	7.19	83.6	77.7
69.	4000.	0.869	3474.	1406.	2.19	746.	81.2	7.86	81.1	69.9
70.	2000.	1.188	2375.	1271.	1.72	680.	65.4	9.04	77.8	58.9

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 10000 MO=0.4

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
51.	11.29	498.5	54.9	857.	1.57	559.3	1.51	1370.	16747.	4435.
52.	11.29	498.5	47.9	813.	1.47	548.1	1.38	1278.	14296.	3335.
53.	11.29	498.5	39.2	756.	1.37	535.0	1.25	1182.	11378.	2246.
54.	11.29	498.5	28.9	686.	1.25	519.9	1.14	1102.	8076.	1250.
55.	11.29	498.5	19.4	626.	1.17	507.9	1.07	1042.	5512.	608.

ALT = 10000 MO=0.5

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
56.	11.99	507.3	55.9	856.	1.63	565.1	1.52	1351.	18335.	4491.
57.	11.99	507.3	51.5	831.	1.57	558.5	1.44	1298.	16897.	3810.
58.	11.99	507.3	42.5	775.	1.46	545.1	1.30	1195.	13887.	2614.
59.	11.99	507.3	31.7	705.	1.33	530.0	1.17	1107.	10447.	1509.
60.	11.99	507.3	21.8	645.	1.24	517.6	1.09	1038.	7778.	785.

ALT = 10000 MO=0.6

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
61.	12.89	517.9	56.8	856.	1.71	572.3	1.53	1330.	20323.	4540.
62.	12.89	517.9	52.5	831.	1.65	566.0	1.45	1278.	18916.	3881.
63.	12.89	517.9	46.0	793.	1.57	556.9	1.35	1209.	16808.	3025.
64.	12.89	517.9	38.8	749.	1.48	547.1	1.26	1139.	14511.	2205.
65.	12.89	517.9	30.3	700.	1.39	536.1	1.17	1078.	11931.	1421.

ALT = 10000 MO=0.729

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
66.	14.40	534.6	58.0	854.	1.84	583.9	1.54	1298.	23475.	4585.
67.	14.40	534.6	54.4	835.	1.79	579.3	1.48	1259.	22372.	4074.
68.	14.40	534.6	50.8	816.	1.75	574.7	1.42	1226.	21258.	3600.
69.	14.40	534.6	43.2	773.	1.65	565.0	1.32	1152.	18885.	2690.
70.	14.40	534.6	34.3	726.	1.55	554.2	1.22	1080.	16221.	1813.

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 20000 MO=0

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
71.	11771.	0.349	4112.	1650.	4.16	890.	67.5	5.52	89.4	94.4
72.	9999.	0.339	3393.	1548.	3.68	824.	61.3	5.65	87.5	88.6
73.	8001.	0.332	2660.	1429.	3.15	740.	54.1	5.77	85.4	81.5
74.	6002.	0.333	1999.	1311.	2.61	644.	45.7	5.97	82.7	72.4
75.	4000.	0.350	1400.	1192.	2.06	528.	36.3	6.19	79.0	60.2
76.	2000.	0.429	859.	1087.	1.52	375.	24.8	6.49	73.1	43.4

ALT = 20000 MO=0.267

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
77.	9076.	0.457	4148.	1656.	4.10	902.	69.9	5.67	89.2	94.3
78.	8000.	0.454	3631.	1582.	3.77	860.	65.5	5.78	88.0	90.4
79.	5998.	0.459	2755.	1449.	3.15	773.	56.8	6.02	85.5	82.0
80.	4000.	0.488	1951.	1303.	2.51	668.	46.6	6.39	82.4	71.1
81.	2000.	0.604	1209.	1150.	1.84	530.	34.1	7.03	77.5	55.2

ALT = 20000 MO=0.4

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
82.	8238.	0.516	4250.	1654.	3.99	908.	72.5	5.82	88.9	93.8
83.	6999.	0.516	3613.	1566.	3.60	861.	67.0	6.00	87.4	88.9
84.	6000.	0.521	3126.	1497.	3.28	820.	62.1	6.18	86.1	84.8
85.	4000.	0.557	2226.	1346.	2.62	725.	51.5	6.65	83.1	74.4
86.	2000.	0.695	1390.	1180.	1.92	602.	38.5	7.49	78.5	58.8

ALT = 20000 MO=0.5

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
87.	7772.	0.562	4365.	1651.	3.89	911.	75.2	5.94	88.6	93.2
88.	7000.	0.564	3947.	1597.	3.64	883.	71.5	6.08	87.7	90.2
89.	6000.	0.570	3418.	1527.	3.32	845.	66.4	6.30	86.4	85.9
90.	4000.	0.611	2446.	1378.	2.66	758.	55.3	6.85	83.4	76.0
91.	2000.	0.770	1539.	1203.	1.96	647.	42.1	7.81	79.0	61.1

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 20000 MO=0

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
71.	6.75	447.3	34.7	789.	1.45	507.7	1.46	1305.	9047.	2724.
72.	6.75	447.3	31.4	757.	1.38	500.0	1.37	1237.	7805.	2195.
73.	6.75	447.3	27.5	719.	1.30	491.0	1.27	1161.	6344.	1657.
74.	6.75	447.3	23.0	675.	1.23	481.3	1.19	1093.	4845.	1156.
75.	6.75	447.3	18.2	624.	1.15	470.8	1.12	1033.	3285.	715.
76.	6.75	447.3	12.4	569.	1.07	459.6	1.05	998.	1668.	332.

ALT = 20000 MO=0.267

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
77.	7.10	453.8	36.1	796.	1.51	513.4	1.50	1307.	10181.	2905.
78.	7.10	453.8	33.7	774.	1.46	507.9	1.43	1256.	9312.	2513.
79.	7.10	453.8	29.0	731.	1.37	497.2	1.31	1171.	7595.	1837.
80.	7.10	453.8	23.5	678.	1.27	485.4	1.20	1085.	5761.	1208.
81.	7.10	453.8	17.1	615.	1.17	471.9	1.11	1010.	3718.	640.

ALT = 20000 MO=0.4

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
82.	7.54	461.7	37.7	804.	1.59	520.2	1.53	1302.	11516.	3096.
83.	7.54	461.7	34.6	777.	1.52	513.5	1.44	1242.	10446.	2597.
84.	7.54	461.7	32.0	754.	1.47	507.7	1.37	1197.	9543.	2210.
85.	7.54	461.7	26.2	701.	1.37	495.5	1.25	1106.	7594.	1490.
86.	7.54	461.7	19.3	636.	1.25	481.5	1.14	1018.	5391.	832.

ALT = 20000 MO=0.5

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
87.	8.01	469.8	39.3	811.	1.67	527.4	1.57	1297.	12892.	3295.
88.	8.01	469.8	37.2	794.	1.63	523.2	1.51	1259.	12205.	2956.
89.	8.01	469.8	34.5	771.	1.57	517.3	1.43	1213.	11283.	2526.
90.	8.01	469.8	28.3	718.	1.46	504.9	1.29	1122.	9270.	1730.
91.	8.01	469.8	21.2	653.	1.33	490.8	1.17	1025.	6974.	1004.

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 20000 MO=0.6

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
92.	7448.	0.607	4522.	1649.	3.78	911.	78.7	6.06	88.3	92.5
93.	7000.	0.610	4267.	1619.	3.64	896.	76.4	6.15	87.7	90.8
94.	5998.	0.618	3707.	1550.	3.31	861.	71.0	6.40	86.5	86.5
95.	4000.	0.667	2670.	1402.	2.67	782.	59.5	7.02	83.6	77.1
96.	2000.	0.848	1697.	1224.	1.98	683.	46.0	8.05	79.4	63.0

ALT = 20000 MO=0.7

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
97.	7199.	0.652	4696.	1647.	3.64	905.	82.7	6.17	87.8	91.5
98.	5999.	0.664	3985.	1566.	3.27	868.	76.0	6.49	86.4	86.7
99.	5000.	0.684	3422.	1493.	2.95	834.	70.1	6.79	85.1	82.2
100.	3000.	0.788	2365.	1342.	2.31	755.	57.0	7.67	81.7	71.9
101.	1000.	1.322	1322.	1139.	1.60	653.	40.6	9.55	76.4	55.0

ALT = 20000 MO=0.892

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
102.	6845.	0.737	5044.	1647.	3.29	882.	90.8	6.48	86.6	88.3
103.	5002.	0.773	3867.	1512.	2.78	830.	79.8	7.02	84.5	81.2
104.	4000.	0.821	3283.	1442.	2.49	798.	72.8	7.44	83.1	77.1
105.	3001.	0.904	2713.	1367.	2.19	764.	65.5	8.00	81.3	71.9
106.	1000.	1.535	1535.	1164.	1.53	686.	47.8	10.05	76.4	57.3

ALT = 30000 MO=0.333

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
107.	6692.	0.469	3140.	1645.	4.62	966.	52.3	5.57	91.1	100.3
108.	6000.	0.466	2798.	1582.	4.28	929.	49.4	5.69	89.8	96.5
109.	5000.	0.466	2328.	1481.	3.79	871.	45.1	5.88	88.0	90.8
110.	4000.	0.474	1895.	1380.	3.30	806.	40.4	6.10	86.1	84.5
111.	2000.	0.551	1102.	1164.	2.27	643.	29.3	6.81	80.9	66.3

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 20000 MO=0.6

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
92.	8.62	479.7	41.3	820.	1.78	536.7	1.63	1292.	14637.	3559.
93.	8.62	479.7	40.1	811.	1.75	534.2	1.59	1271.	14229.	3345.
94.	8.62	479.7	37.1	788.	1.69	528.4	1.50	1225.	13286.	2873.
95.	8.62	479.7	30.7	735.	1.57	515.8	1.35	1133.	11220.	2003.
96.	8.62	479.7	23.3	671.	1.43	501.9	1.21	1031.	8849.	1207.

ALT = 20000 MO=0.7

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
97.	9.37	491.4	43.7	831.	1.91	547.8	1.69	1287.	16714.	3868.
98.	9.37	491.4	40.0	804.	1.84	540.8	1.57	1232.	15587.	3250.
99.	9.37	491.4	36.7	779.	1.77	534.7	1.48	1184.	14575.	2763.
100.	9.37	491.4	29.4	722.	1.63	521.7	1.32	1093.	12312.	1850.
101.	9.37	491.4	20.5	654.	1.48	506.2	1.18	982.	9669.	991.

ALT = 20000 MO=0.892

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
102.	11.33	518.8	48.9	852.	2.25	573.2	1.82	1284.	21865.	4530.
103.	11.33	518.8	42.4	809.	2.12	562.8	1.63	1188.	19923.	3482.
104.	11.33	518.8	38.5	783.	2.04	556.7	1.53	1145.	18755.	2939.
105.	11.33	518.8	34.3	754.	1.96	550.2	1.44	1101.	17522.	2420.
106.	11.33	518.8	24.5	690.	1.79	535.1	1.26	985.	14801.	1401.

ALT = 30000 MO=0.333

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
107.	4.71	420.9	26.3	771.	1.62	483.2	1.64	1284.	7858.	2376.
108.	4.71	420.9	24.8	752.	1.58	478.5	1.56	1239.	7315.	2091.
109.	4.71	420.9	22.5	722.	1.50	471.1	1.45	1170.	6491.	1702.
110.	4.71	420.9	20.0	690.	1.43	463.2	1.35	1104.	5617.	1339.
111.	4.71	420.9	14.2	611.	1.27	445.6	1.18	980.	3675.	683.

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 30000 MO=0.4

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
112.	6402.	0.498	3185.	1645.	4.54	965.	53.3	5.64	90.8	99.8
113.	5000.	0.495	2476.	1506.	3.85	889.	47.1	5.92	88.3	91.9
114.	4000.	0.504	2016.	1402.	3.36	827.	42.3	6.17	86.4	85.6
115.	3001.	0.528	1585.	1296.	2.85	757.	36.9	6.51	84.2	78.1
116.	1000.	0.777	778.	1059.	1.76	567.	23.4	7.88	77.0	54.2

ALT = 30000 MO=0.5

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
117.	6066.	0.540	3276.	1646.	4.41	963.	55.1	5.75	90.4	99.0
118.	5000.	0.539	2693.	1537.	3.90	909.	50.1	5.99	88.5	93.1
119.	4000.	0.549	2197.	1431.	3.39	852.	45.2	6.28	86.6	86.7
120.	3000.	0.577	1731.	1321.	2.89	787.	39.7	6.66	84.5	79.3
121.	1000.	0.860	861.	1075.	1.80	616.	25.8	8.21	77.7	56.7

ALT = 30000 MO=0.6

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
122.	5831.	0.582	3394.	1646.	4.27	957.	57.5	5.84	89.9	98.0
123.	5000.	0.582	2912.	1561.	3.88	919.	53.4	6.06	88.5	93.6
124.	3999.	0.594	2377.	1455.	3.39	867.	48.2	6.38	86.7	87.3
125.	3000.	0.626	1878.	1344.	2.89	808.	42.5	6.81	84.6	80.1
126.	1000.	0.947	947.	1093.	1.82	655.	28.3	8.51	78.1	58.9

ALT = 30000 MO=0.7

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
127.	5704.	0.623	3552.	1651.	4.13	948.	60.4	5.93	89.5	96.9
128.	5000.	0.624	3121.	1578.	3.81	919.	56.9	6.13	88.3	93.3
129.	4000.	0.638	2553.	1474.	3.34	873.	51.5	6.49	86.6	87.4
130.	3000.	0.675	2024.	1363.	2.85	820.	45.5	6.95	84.6	80.6
131.	1000.	1.037	1037.	1109.	1.82	684.	31.0	8.74	78.4	60.5

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 30000 MO=0.4

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
112.	4.87	424.9	26.9	775.	1.67	486.7	1.66	1283.	8328.	2449.
113.	4.87	424.9	23.6	733.	1.56	476.4	1.49	1185.	7173.	1858.
114.	4.87	424.9	21.1	701.	1.48	468.4	1.38	1116.	6283.	1468.
115.	4.87	424.9	18.2	664.	1.40	459.8	1.29	1051.	5328.	1104.
116.	4.87	424.9	11.3	573.	1.22	440.0	1.12	927.	3126.	444.

ALT = 30000 MO=0.5

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
117.	5.18	432.4	28.0	781.	1.75	493.4	1.71	1282.	9220.	2592.
118.	5.18	432.4	25.3	748.	1.67	485.4	1.57	1204.	8319.	2105.
119.	5.18	432.4	22.7	717.	1.58	477.3	1.44	1132.	7409.	1676.
120.	5.18	432.4	19.7	680.	1.50	468.5	1.34	1063.	6423.	1276.
121.	5.18	432.4	12.5	589.	1.30	448.5	1.15	929.	4131.	546.

ALT = 30000 MO=0.6

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
122.	5.57	441.5	29.4	788.	1.86	501.9	1.77	1280.	10342.	2784.
123.	5.57	441.5	27.2	763.	1.79	495.5	1.65	1218.	9632.	2372.
124.	5.57	441.5	24.4	732.	1.70	487.4	1.51	1145.	8707.	1903.
125.	5.57	441.5	21.3	695.	1.61	478.6	1.39	1074.	7699.	1463.
126.	5.57	441.5	13.8	605.	1.40	458.6	1.18	932.	5332.	662.

ALT = 30000 MO=0.7

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
127.	6.06	452.2	31.2	798.	2.01	512.3	1.85	1283.	11740.	3026.
128.	6.06	452.2	29.2	777.	1.94	507.0	1.73	1228.	11122.	2656.
129.	6.06	452.2	26.3	746.	1.85	498.9	1.58	1155.	10192.	2148.
130.	6.06	452.2	23.0	710.	1.75	490.1	1.45	1082.	9170.	1669.
131.	6.06	452.2	15.1	622.	1.52	470.4	1.22	935.	6736.	797.

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 30000 MO=0.82

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
132.	5581.	0.669	3736.	1652.	3.91	934.	64.2	6.08	88.7	95.0
133.	5000.	0.672	3361.	1593.	3.66	911.	61.1	6.25	87.8	92.2
134.	4000.	0.687	2748.	1489.	3.21	868.	55.5	6.62	86.2	86.6
135.	3000.	0.730	2190.	1380.	2.76	821.	49.3	7.11	84.2	80.2
136.	1000.	1.142	1142.	1127.	1.78	704.	34.2	9.01	78.4	61.5

ALT = 30000 MO=0.9

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
137.	5463.	0.699	3818.	1640.	3.73	921.	67.0	6.19	88.2	93.4
138.	5000.	0.703	3516.	1598.	3.53	903.	64.3	6.34	87.4	91.2
139.	4000.	0.721	2884.	1498.	3.10	862.	58.2	6.74	85.8	85.8
140.	3001.	0.765	2294.	1388.	2.67	817.	51.9	7.24	83.9	79.6
141.	1000.	1.207	1207.	1137.	1.74	709.	36.4	9.18	78.3	61.7

ALT = 30000 MO=0.95

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
142.	5476.	0.718	3932.	1644.	3.64	915.	69.2	6.25	87.9	92.7
143.	4999.	0.723	3613.	1600.	3.45	897.	66.4	6.41	87.2	90.4
144.	4000.	0.742	2969.	1504.	3.03	857.	60.0	6.83	85.5	85.2
145.	3001.	0.787	2361.	1392.	2.61	813.	53.6	7.33	83.6	79.2
146.	1000.	1.239	1239.	1140.	1.70	708.	37.7	9.31	78.1	61.5

ALT = 35000 MO=0.374

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
147.	5686.	0.479	2726.	1641.	4.92	998.	45.1	5.49	92.2	103.7
148.	5000.	0.476	2379.	1568.	4.48	955.	42.0	5.68	90.5	98.9
149.	4000.	0.477	1909.	1446.	3.86	885.	37.5	5.91	88.3	91.8
150.	3000.	0.491	1474.	1321.	3.24	805.	32.7	6.23	85.9	83.7
151.	1000.	0.682	682.	1045.	1.90	584.	20.2	7.50	78.1	57.7

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 30000 MO=0.82

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
132.	6.79	467.3	33.6	809.	2.21	526.4	1.95	1281.	13765.	3345.
133.	6.79	467.3	31.8	793.	2.16	522.1	1.84	1237.	13231.	3012.
134.	6.79	467.3	28.6	762.	2.06	514.3	1.68	1162.	12259.	2458.
135.	6.79	467.3	25.1	727.	1.95	505.8	1.53	1089.	11199.	1937.
136.	6.79	467.3	16.9	642.	1.70	486.4	1.28	939.	8711.	978.

ALT = 30000 MO=0.9

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
137.	7.38	478.7	35.2	817.	2.37	536.5	2.01	1271.	15314.	3555.
138.	7.38	478.7	33.7	804.	2.32	533.2	1.93	1239.	14871.	3271.
139.	7.38	478.7	30.3	772.	2.22	525.5	1.75	1167.	13868.	2680.
140.	7.38	478.7	26.7	738.	2.11	517.2	1.59	1091.	12771.	2126.
141.	7.38	478.7	18.1	656.	1.85	498.2	1.32	941.	10211.	1111.

ALT = 30000 MO=0.95

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
142.	7.80	486.3	36.6	824.	2.48	543.9	2.08	1273.	16476.	3744.
143.	7.80	486.3	35.0	811.	2.44	540.5	1.98	1240.	16009.	3442.
144.	7.80	486.3	31.5	779.	2.33	533.0	1.80	1170.	14982.	2827.
145.	7.80	486.3	27.7	745.	2.22	524.8	1.63	1093.	13859.	2253.
146.	7.80	486.3	18.8	664.	1.95	505.9	1.34	941.	11222.	1193.

ALT = 35000 MO=0.374

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
147.	3.81	404.9	22.2	757.	1.70	468.8	1.74	1275.	6847.	2152.
148.	3.81	404.9	20.8	736.	1.64	463.0	1.63	1222.	6328.	1841.
149.	3.81	404.9	18.5	700.	1.54	454.2	1.48	1137.	5504.	1434.
150.	3.81	404.9	15.9	661.	1.44	444.4	1.35	1056.	4612.	1059.
151.	3.81	404.9	9.6	557.	1.23	421.8	1.13	904.	2544.	395.

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 35000 MO=0.4

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
152.	5610.	0.490	2749.	1642.	4.90	998.	45.5	5.51	92.1	103.6
153.	5000.	0.487	2433.	1577.	4.50	960.	42.6	5.68	90.6	99.3
154.	4000.	0.488	1953.	1455.	3.88	892.	38.2	5.93	88.4	92.2
155.	3000.	0.503	1508.	1329.	3.25	813.	33.2	6.26	85.9	84.1
156.	1000.	0.700	699.	1050.	1.91	597.	20.6	7.59	78.3	58.3

ALT = 35000 MO=0.5

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
157.	5317.	0.530	2818.	1641.	4.75	992.	47.0	5.61	91.6	102.5
158.	4999.	0.528	2641.	1607.	4.54	974.	45.4	5.71	90.8	100.3
159.	4000.	0.531	2123.	1485.	3.93	911.	40.7	6.00	88.6	93.3
160.	3000.	0.547	1641.	1355.	3.29	839.	35.5	6.38	86.2	85.4
161.	1000.	0.771	771.	1069.	1.95	643.	22.6	7.91	78.9	60.7

ALT = 35000 MO=0.6

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
162.	5100.	0.570	2905.	1642.	4.58	983.	48.7	5.71	91.0	101.1
163.	4000.	0.572	2289.	1508.	3.91	921.	43.3	6.07	88.6	93.8
164.	3000.	0.592	1775.	1378.	3.29	855.	38.0	6.49	86.3	86.0
165.	2000.	0.650	1301.	1243.	2.65	776.	31.9	7.10	83.4	76.6
166.	1000.	0.846	846.	1086.	1.97	679.	24.7	8.15	79.3	62.6

ALT = 35000 MO=0.7

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
167.	4957.	0.608	3012.	1641.	4.39	971.	50.9	5.81	90.3	99.6
168.	4000.	0.612	2448.	1524.	3.84	920.	46.1	6.13	88.4	93.6
169.	3000.	0.635	1906.	1395.	3.24	862.	40.5	6.60	86.1	86.1
170.	2000.	0.702	1404.	1260.	2.62	791.	34.3	7.26	83.4	77.1
171.	1000.	0.923	923.	1104.	1.97	704.	26.8	8.38	79.5	64.0

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 35000 MO=0.4

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
152.	3.86	406.5	22.5	759.	1.72	470.3	1.76	1275.	7010.	2184.
153.	3.86	406.5	21.1	741.	1.66	465.1	1.65	1228.	6547.	1901.
154.	3.86	406.5	18.8	704.	1.57	456.2	1.50	1142.	5719.	1483.
155.	3.86	406.5	16.2	665.	1.47	446.4	1.36	1060.	4823.	1097.
156.	3.86	406.5	9.8	561.	1.25	423.7	1.14	905.	2730.	415.

ALT = 35000 MO=0.5

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
157.	4.10	413.6	23.4	765.	1.80	476.6	1.80	1273.	7710.	2300.
158.	4.10	413.6	22.7	756.	1.77	473.8	1.74	1248.	7465.	2139.
159.	4.10	413.6	20.2	719.	1.67	464.8	1.57	1160.	6627.	1680.
160.	4.10	413.6	17.5	680.	1.57	454.8	1.42	1074.	5712.	1253.
161.	4.10	413.6	10.8	576.	1.33	431.8	1.17	910.	3538.	502.

ALT = 35000 MO=0.6

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
162.	4.41	422.3	24.5	773.	1.92	484.4	1.86	1272.	8591.	2443.
163.	4.41	422.3	21.7	733.	1.80	474.5	1.65	1174.	7668.	1892.
164.	4.41	422.3	18.8	694.	1.69	464.6	1.48	1085.	6737.	1426.
165.	4.41	422.3	15.6	648.	1.56	453.7	1.34	1001.	5691.	998.
166.	4.41	422.3	11.8	592.	1.43	441.5	1.21	913.	4496.	604.

ALT = 35000 MO=0.7

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
167.	4.80	432.6	25.9	781.	2.05	494.0	1.93	1271.	9680.	2625.
168.	4.80	432.6	23.3	747.	1.95	485.5	1.74	1183.	8849.	2117.
169.	4.80	432.6	20.3	708.	1.83	475.5	1.55	1094.	7911.	1613.
170.	4.80	432.6	16.9	663.	1.70	464.7	1.39	1008.	6842.	1148.
171.	4.80	432.6	13.0	608.	1.55	452.8	1.25	918.	5614.	718.

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 35000 MO=0.82

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
172.	4899.	0.652	3193.	1645.	4.18	957.	54.4	5.93	89.7	97.8
173.	4000.	0.656	2624.	1534.	3.69	912.	49.7	6.24	87.9	92.5
174.	3001.	0.684	2052.	1409.	3.12	858.	43.8	6.73	85.8	85.4
175.	1999.	0.762	1523.	1276.	2.55	796.	37.2	7.43	83.2	77.1
176.	1000.	1.014	1013.	1121.	1.93	721.	29.6	8.62	79.4	64.8

ALT = 35000 MO=0.9

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
177.	4887.	0.681	3327.	1646.	4.03	946.	57.1	6.02	89.2	96.5
178.	4000.	0.686	2742.	1539.	3.56	904.	52.2	6.34	87.5	91.5
179.	2999.	0.716	2147.	1415.	3.02	852.	46.1	6.84	85.5	84.6
180.	2001.	0.796	1593.	1283.	2.47	793.	39.2	7.56	82.9	76.6
181.	1000.	1.068	1068.	1130.	1.88	724.	31.4	8.77	79.3	64.8

ALT = 35000 MO=0.95

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
182.	4876.	0.699	3408.	1645.	3.93	938.	58.9	6.08	88.9	95.5
183.	4001.	0.704	2819.	1542.	3.48	898.	53.9	6.41	87.2	90.7
184.	2999.	0.736	2207.	1418.	2.95	848.	47.6	6.92	85.2	84.0
185.	2001.	0.818	1637.	1286.	2.41	790.	40.5	7.66	82.6	76.1
186.	1000.	1.096	1096.	1133.	1.84	723.	32.5	8.89	79.0	64.5

ALT = 40000 MO=0.422

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
187.	4370.	0.500	2187.	1640.	4.88	997.	36.1	5.56	92.0	103.4
188.	4000.	0.499	1996.	1590.	4.57	968.	34.3	5.70	90.8	100.2
189.	3000.	0.504	1512.	1435.	3.78	882.	29.7	6.04	88.0	91.1
190.	2000.	0.535	1070.	1271.	2.97	779.	24.6	6.51	84.8	79.9
191.	1000.	0.660	660.	1092.	2.12	644.	18.2	7.39	79.9	63.6

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 35000 MO=0.82

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
172.	5.38	447.0	28.0	793.	2.27	507.7	2.05	1272.	11335.	2920.
173.	5.38	447.0	25.4	762.	2.16	499.9	1.85	1188.	10523.	2402.
174.	5.38	447.0	22.1	724.	2.04	490.4	1.64	1100.	9542.	1851.
175.	5.38	447.0	18.5	680.	1.90	479.8	1.47	1014.	8442.	1345.
176.	5.38	447.0	14.4	627.	1.74	468.1	1.31	923.	7182.	873.

ALT = 35000 MO=0.9

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
177.	5.85	457.9	29.6	802.	2.43	518.0	2.15	1272.	12650.	3149.
178.	5.85	457.9	26.9	772.	2.33	510.5	1.93	1191.	11822.	2608.
179.	5.85	457.9	23.5	734.	2.20	501.1	1.71	1102.	10808.	2023.
180.	5.85	457.9	19.6	690.	2.05	490.8	1.52	1015.	9667.	1482.
181.	5.85	457.9	15.4	640.	1.89	479.3	1.35	924.	8373.	985.

ALT = 35000 MO=0.95

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
182.	6.18	465.2	30.7	808.	2.55	524.7	2.21	1271.	13558.	3300.
183.	6.18	465.2	27.9	779.	2.44	517.5	1.99	1192.	12728.	2745.
184.	6.18	465.2	24.4	740.	2.31	508.3	1.76	1103.	11686.	2138.
185.	6.18	465.2	20.4	697.	2.16	498.1	1.56	1016.	10518.	1574.
186.	6.18	465.2	16.0	647.	1.99	486.7	1.38	924.	9179.	1053.

ALT = 40000 MO=0.422

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
187.	3.07	403.9	17.8	755.	1.74	467.1	1.77	1274.	5636.	1738.
188.	3.07	403.9	17.0	741.	1.69	463.1	1.68	1238.	5356.	1561.
189.	3.07	403.9	14.6	695.	1.57	451.8	1.48	1128.	4521.	1137.
190.	3.07	403.9	12.0	643.	1.44	439.0	1.32	1024.	3591.	754.
191.	3.07	403.9	8.7	575.	1.30	424.6	1.17	924.	2529.	409.

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 40000 MO=0.5

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
192.	4199.	0.531	2231.	1640.	4.77	993.	37.0	5.64	91.6	102.6
193.	4000.	0.531	2123.	1613.	4.60	978.	36.0	5.72	90.9	100.9
194.	3000.	0.537	1611.	1457.	3.81	897.	31.3	6.10	88.1	92.0
195.	2000.	0.571	1143.	1291.	3.00	800.	25.9	6.63	85.0	80.9
196.	1000.	0.709	709.	1108.	2.15	675.	19.4	7.60	80.3	65.3

ALT = 40000 MO=0.6

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
197.	4027.	0.570	2297.	1639.	4.59	983.	38.4	5.74	91.0	101.2
198.	3500.	0.573	2004.	1560.	4.18	946.	35.8	5.95	89.5	96.9
199.	3000.	0.579	1736.	1480.	3.80	909.	33.3	6.17	88.1	92.5
200.	2000.	0.618	1237.	1312.	3.00	820.	27.8	6.77	85.1	81.7
201.	1000.	0.774	774.	1128.	2.16	707.	21.0	7.84	80.5	67.0

ALT = 40000 MO=0.7

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
202.	3924.	0.608	2385.	1640.	4.41	971.	40.2	5.84	90.4	99.7
203.	3500.	0.611	2138.	1575.	4.10	943.	38.1	6.00	89.3	96.4
204.	3000.	0.619	1857.	1496.	3.73	909.	35.5	6.24	88.0	92.3
205.	2000.	0.664	1329.	1329.	2.96	831.	29.7	6.90	85.0	82.0
206.	1000.	0.840	840.	1145.	2.15	730.	22.8	8.04	80.7	68.1

ALT = 40000 MO=0.82

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
207.	3870.	0.651	2519.	1642.	4.20	957.	42.9	5.95	89.7	97.9
208.	3500.	0.654	2290.	1585.	3.94	934.	41.0	6.10	88.8	95.2
209.	3000.	0.664	1992.	1507.	3.59	902.	38.2	6.35	87.5	91.3
210.	2000.	0.716	1433.	1343.	2.86	830.	32.1	7.05	84.7	81.6
211.	1000.	0.919	919.	1162.	2.10	743.	25.0	8.27	80.5	68.7

NASA QUIET ENGINE FAN 8
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 40000 MO=0.5

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
192.	3.23	409.5	18.4	760.	1.81	472.1	1.80	1273.	6080.	1812.
193.	3.23	409.5	18.0	752.	1.78	469.9	1.75	1253.	5928.	1710.
194.	3.23	409.5	15.5	706.	1.65	458.5	1.54	1142.	5084.	1254.
195.	3.23	409.5	12.7	654.	1.52	445.5	1.36	1034.	4136.	841.
196.	3.23	409.5	9.3	587.	1.37	431.0	1.20	929.	3043.	469.

ALT = 40000 MO=0.6

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
197.	3.47	418.2	19.3	767.	1.92	479.9	1.86	1271.	6772.	1924.
198.	3.47	418.2	18.0	744.	1.85	474.0	1.73	1212.	6338.	1657.
199.	3.47	418.2	16.6	720.	1.78	468.1	1.62	1155.	5902.	1414.
200.	3.47	418.2	13.7	668.	1.63	455.1	1.41	1043.	4935.	962.
201.	3.47	418.2	10.1	603.	1.47	440.5	1.24	935.	3806.	554.

ALT = 40000 MO=0.7

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
202.	3.77	428.3	20.4	775.	2.06	489.4	1.94	1270.	7636.	2073.
203.	3.77	428.3	19.3	756.	2.00	484.8	1.83	1222.	7273.	1845.
204.	3.77	428.3	17.9	734.	1.93	478.9	1.70	1163.	6828.	1586.
205.	3.77	428.3	14.8	682.	1.77	466.1	1.48	1050.	5852.	1095.
206.	3.77	428.3	11.1	618.	1.60	451.6	1.28	940.	4694.	651.

ALT = 40000 MO=0.82

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
207.	4.23	442.6	22.0	787.	2.27	502.9	2.06	1270.	8931.	2301.
208.	4.23	442.6	21.0	771.	2.21	498.9	1.95	1226.	8601.	2086.
209.	4.23	442.6	19.5	749.	2.14	493.3	1.81	1169.	8136.	1803.
210.	4.23	442.6	16.1	698.	1.97	480.9	1.56	1056.	7120.	1266.
211.	4.23	442.6	12.2	636.	1.78	466.7	1.35	945.	5935.	782.

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 40000 MO=0.9

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
212.	3869.	0.680	2629.	1644.	4.05	947.	45.1	6.04	89.2	96.6
213.	3000.	0.694	2082.	1512.	3.47	894.	40.2	6.45	87.1	90.2
214.	2500.	0.713	1784.	1433.	3.12	861.	37.1	6.78	85.8	85.8
215.	2001.	0.749	1499.	1350.	2.77	826.	33.8	7.17	84.3	80.9
216.	1000.	0.965	965.	1169.	2.05	743.	26.5	8.41	80.3	68.4

ALT = 40000 MO=0.95

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
217.	3864.	0.698	2696.	1644.	3.95	939.	46.5	6.10	88.9	95.7
218.	3001.	0.713	2138.	1515.	3.38	889.	41.5	6.52	86.8	89.5
219.	2500.	0.733	1832.	1436.	3.05	857.	38.3	6.85	85.6	85.2
220.	2001.	0.770	1541.	1354.	2.71	822.	34.9	7.26	84.1	80.3
221.	1000.	0.991	991.	1172.	2.00	742.	27.4	8.51	80.1	68.1

ALT = 45000 MO=0.475

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
222.	3257.	0.528	1720.	1638.	4.71	986.	28.2	5.70	91.3	101.9
223.	2999.	0.529	1585.	1592.	4.44	960.	27.0	5.82	90.3	99.1
224.	2500.	0.533	1332.	1493.	3.95	908.	24.7	6.05	88.6	93.4
225.	2000.	0.546	1092.	1389.	3.43	850.	22.2	6.33	86.7	86.9
226.	1000.	0.650	650.	1167.	2.38	704.	16.3	7.26	81.7	70.0

ALT = 45000 MO=0.6

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
227.	3083.	0.579	1784.	1638.	4.50	975.	29.5	5.83	90.6	100.3
228.	2500.	0.585	1461.	1521.	3.93	922.	26.7	6.13	88.6	94.1
229.	2000.	0.601	1202.	1417.	3.43	869.	24.1	6.46	86.8	87.8
230.	1500.	0.637	956.	1308.	2.92	810.	21.2	6.89	84.7	80.5
231.	500.	0.987	494.	1060.	1.83	655.	14.1	8.62	78.1	59.1

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 40000 MO=0.9

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
212.	4.60	453.4	23.3	796.	2.44	513.1	2.15	1271.	9972.	2487.
213.	4.60	453.4	20.6	759.	2.30	503.9	1.89	1171.	9153.	1959.
214.	4.60	453.4	18.9	735.	2.22	497.9	1.75	1115.	8649.	1666.
215.	4.60	453.4	17.1	708.	2.13	491.6	1.62	1058.	8105.	1388.
216.	4.60	453.4	13.0	647.	1.93	477.8	1.39	946.	6872.	875.

ALT = 40000 MO=0.95

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
217.	4.86	460.6	24.2	802.	2.55	519.9	2.22	1271.	10690.	2607.
218.	4.86	460.6	21.4	765.	2.42	510.8	1.94	1172.	9863.	2062.
219.	4.86	460.6	19.6	741.	2.34	505.0	1.79	1115.	9345.	1759.
220.	4.86	460.6	17.7	715.	2.24	498.8	1.66	1059.	8786.	1469.
221.	4.86	460.6	13.6	654.	2.04	485.1	1.42	946.	7515.	934.

ALT = 45000 MO=0.475

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
222.	2.50	407.6	14.1	755.	1.77	469.2	1.76	1274.	4601.	1357.
223.	2.50	407.6	13.5	742.	1.73	465.7	1.69	1241.	4396.	1235.
224.	2.50	407.6	12.3	712.	1.65	458.4	1.55	1169.	3976.	1013.
225.	2.50	407.6	11.0	682.	1.56	450.6	1.43	1099.	3524.	804.
226.	2.50	407.6	7.9	605.	1.38	433.0	1.23	966.	2503.	426.

ALT = 45000 MO=0.6

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
227.	2.73	418.2	14.9	764.	1.90	478.7	1.83	1272.	5259.	1465.
228.	2.73	418.2	13.4	730.	1.80	470.2	1.65	1186.	4766.	1176.
229.	2.73	418.2	12.0	699.	1.71	462.4	1.52	1114.	4305.	942.
230.	2.73	418.2	10.5	664.	1.62	453.8	1.39	1044.	3803.	723.
231.	2.73	418.2	6.8	576.	1.40	434.6	1.18	903.	2623.	325.

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 45000 MO=0.7

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
232.	3018.	0.616	1859.	1640.	4.35	965.	31.0	5.91	90.1	99.0
233.	2500.	0.624	1560.	1537.	3.86	921.	28.4	6.19	88.4	93.8
234.	2000.	0.644	1288.	1434.	3.38	875.	25.7	6.56	86.6	87.9
235.	1500.	0.685	1027.	1325.	2.89	822.	22.7	7.03	84.6	80.9
236.	500.	1.076	538.	1075.	1.83	684.	15.4	8.86	78.4	60.6

ALT = 45000 MO=0.82

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
237.	2973.	0.660	1961.	1640.	4.13	950.	33.1	6.03	89.4	97.2
238.	2500.	0.668	1671.	1546.	3.71	913.	30.6	6.30	87.9	92.7
239.	2000.	0.691	1382.	1446.	3.25	869.	27.7	6.68	86.2	87.0
240.	1500.	0.739	1109.	1339.	2.79	822.	24.6	7.18	84.3	80.5
241.	500.	1.179	590.	1090.	1.79	703.	17.0	9.12	78.4	61.7

ALT = 45000 MO=0.9

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
242.	2968.	0.688	2041.	1642.	3.99	940.	34.8	6.12	89.0	95.9
243.	2501.	0.698	1745.	1551.	3.59	905.	32.2	6.40	87.5	91.6
244.	2000.	0.722	1444.	1451.	3.15	863.	29.2	6.79	85.9	86.1
245.	1500.	0.773	1159.	1345.	2.70	818.	25.9	7.31	84.0	79.9
246.	500.	1.242	621.	1097.	1.75	708.	18.2	9.28	78.3	61.8

ALT = 45000 MO=0.95

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
247.	2964.	0.706	2092.	1642.	3.89	933.	35.9	6.18	88.6	95.0
248.	2501.	0.717	1792.	1553.	3.50	899.	33.2	6.47	87.3	90.8
249.	2000.	0.742	1483.	1454.	3.08	859.	30.1	6.87	85.6	85.5
250.	1501.	0.794	1191.	1348.	2.64	814.	26.8	7.40	83.7	79.4
251.	500.	1.275	637.	1099.	1.71	708.	18.8	9.39	78.1	61.6

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 45000 MO=0.7

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
232.	2.97	428.3	15.8	773.	2.05	488.5	1.91	1272.	5948.	1589.
233.	2.97	428.3	14.4	743.	1.95	481.1	1.74	1195.	5496.	1315.
234.	2.97	428.3	12.9	713.	1.86	473.3	1.59	1123.	5033.	1062.
235.	2.97	428.3	11.3	678.	1.75	464.8	1.46	1051.	4523.	824.
236.	2.97	428.3	7.4	592.	1.53	445.7	1.22	906.	3310.	391.

ALT = 45000 MO=0.82

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
237.	3.33	442.6	17.1	784.	2.26	501.9	2.03	1271.	6960.	1763.
238.	3.33	442.6	15.7	758.	2.17	495.4	1.85	1199.	6531.	1492.
239.	3.33	442.6	14.1	728.	2.07	487.8	1.69	1128.	6045.	1215.
240.	3.33	442.6	12.4	694.	1.96	479.6	1.54	1056.	5517.	955.
241.	3.33	442.6	8.3	611.	1.71	460.8	1.28	907.	4277.	479.

ALT = 45000 MO=0.9

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
242.	3.62	453.4	18.1	793.	2.42	512.2	2.12	1271.	7773.	1903.
243.	3.62	453.4	16.6	768.	2.33	505.8	1.94	1201.	7337.	1619.
244.	3.62	453.4	15.0	738.	2.23	498.4	1.76	1129.	6835.	1325.
245.	3.62	453.4	13.1	704.	2.12	490.4	1.60	1058.	6287.	1048.
246.	3.62	453.4	8.9	624.	1.85	472.0	1.32	908.	5011.	544.

ALT = 45000 MO=0.95

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
247.	3.82	460.6	18.7	799.	2.54	518.9	2.18	1270.	8337.	1996.
248.	3.82	460.6	17.3	774.	2.45	512.8	1.99	1202.	7895.	1703.
249.	3.82	460.6	15.5	744.	2.34	505.4	1.81	1130.	7381.	1399.
250.	3.82	460.6	13.6	710.	2.23	497.6	1.63	1058.	6821.	1111.
251.	3.82	460.6	9.2	631.	1.95	479.3	1.34	906.	5505.	585.

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 50000 MO=0.536

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
252.	2418.	0.563	1360.	1638.	4.51	972.	22.1	5.86	90.6	100.2
253.	2000.	0.567	1134.	1531.	3.99	920.	20.2	6.12	88.7	94.3
254.	1500.	0.588	882.	1397.	3.34	849.	17.6	6.52	86.3	86.2
255.	1000.	0.647	647.	1257.	2.68	765.	14.7	7.11	83.4	76.4
256.	500.	0.848	424.	1097.	1.98	659.	11.3	8.13	79.1	61.8

ALT = 50000 MO=0.6

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
257.	2369.	0.589	1394.	1640.	4.43	968.	22.8	5.91	90.3	99.5
258.	2000.	0.594	1188.	1545.	3.97	925.	21.0	6.16	88.7	94.5
259.	1500.	0.617	925.	1411.	3.33	858.	18.4	6.59	86.3	86.6
260.	1000.	0.681	681.	1270.	2.68	779.	15.4	7.21	83.5	77.1
261.	500.	0.898	449.	1107.	1.99	680.	11.9	8.28	79.3	62.9

ALT = 50000 MO=0.7

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
262.	2311.	0.627	1448.	1639.	4.27	957.	23.9	6.00	89.8	98.2
263.	2000.	0.634	1267.	1560.	3.90	924.	22.4	6.22	88.5	94.2
264.	1500.	0.661	991.	1427.	3.28	864.	19.6	6.69	86.2	86.6
265.	1000.	0.734	734.	1286.	2.65	793.	16.6	7.37	83.5	77.6
266.	500.	0.977	488.	1124.	1.98	705.	13.0	8.51	79.5	64.3

ALT = 50000 MO=0.82

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
267.	2279.	0.670	1527.	1640.	4.06	944.	25.6	6.12	89.1	96.4
268.	2000.	0.678	1356.	1569.	3.74	915.	24.1	6.32	88.0	93.1
269.	1500.	0.709	1064.	1439.	3.16	860.	21.2	6.82	85.9	85.9
270.	1000.	0.795	794.	1301.	2.57	797.	18.0	7.54	83.2	77.5
271.	500.	1.068	534.	1140.	1.94	722.	14.3	8.76	79.4	65.0

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 50000 MO=0.536

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
252.	2.05	412.5	11.2	756.	1.82	472.3	1.76	1275.	3799.	1067.
253.	2.05	412.5	10.2	725.	1.73	464.6	1.61	1197.	3447.	870.
254.	2.05	412.5	8.8	686.	1.62	454.6	1.45	1106.	2989.	650.
255.	2.05	412.5	7.2	638.	1.50	443.5	1.31	1019.	2479.	448.
256.	2.05	412.5	5.4	580.	1.37	431.2	1.18	930.	1895.	263.

ALT = 50000 MO=0.6

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
257.	2.15	418.2	11.6	761.	1.89	477.8	1.81	1275.	4092.	1120.
258.	2.15	418.2	10.6	734.	1.81	470.9	1.66	1206.	3779.	937.
259.	2.15	418.2	9.2	694.	1.69	460.9	1.49	1113.	3316.	705.
260.	2.15	418.2	7.6	647.	1.57	449.8	1.34	1024.	2797.	491.
261.	2.15	418.2	5.8	590.	1.43	437.5	1.21	932.	2202.	296.

ALT = 50000 MO=0.7

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
262.	2.33	428.3	12.3	770.	2.03	487.4	1.88	1273.	4625.	1211.
263.	2.33	428.3	11.4	747.	1.96	481.7	1.75	1214.	4353.	1048.
264.	2.33	428.3	9.9	708.	1.84	471.7	1.56	1121.	3887.	796.
265.	2.33	428.3	8.2	662.	1.71	460.7	1.40	1031.	3357.	564.
266.	2.33	428.3	6.3	606.	1.56	448.6	1.25	936.	2745.	351.

ALT = 50000 MO=0.82

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
267.	2.62	442.6	13.2	781.	2.24	500.9	1.99	1272.	5421.	1347.
268.	2.62	442.6	12.4	761.	2.17	496.0	1.87	1218.	5167.	1188.
269.	2.62	442.6	10.8	723.	2.05	486.3	1.65	1126.	4680.	913.
270.	2.62	442.6	9.0	678.	1.90	475.6	1.47	1035.	4133.	660.
271.	2.62	442.6	7.0	624.	1.74	463.7	1.31	939.	3508.	425.

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 50000 MO=0.9

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
272.	2270.	0.699	1586.	1640.	3.91	933.	26.8	6.21	88.7	95.1
273.	2000.	0.707	1414.	1573.	3.62	907.	25.3	6.42	87.6	92.0
274.	1500.	0.741	1112.	1444.	3.06	854.	22.3	6.93	85.5	85.1
275.	1000.	0.830	830.	1307.	2.49	794.	19.0	7.67	82.9	76.9
276.	500.	1.125	562.	1148.	1.89	724.	15.1	8.90	79.3	65.0

ALT = 50000 MO=0.95

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
277.	2268.	0.717	1625.	1640.	3.82	926.	27.7	6.27	88.3	94.3
278.	2000.	0.726	1452.	1575.	3.53	901.	26.1	6.48	87.3	91.2
279.	1500.	0.761	1142.	1446.	2.99	850.	23.1	7.00	85.3	84.4
280.	1000.	0.852	853.	1309.	2.44	791.	19.6	7.76	82.7	76.4
281.	500.	1.153	577.	1150.	1.85	723.	15.7	9.02	79.0	64.6

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 50000 MO=0.9

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
272.	2.85	453.4	14.0	790.	2.41	511.1	2.08	1271.	6054.	1452.
273.	2.85	453.4	13.1	771.	2.34	506.4	1.95	1220.	5802.	1288.
274.	2.85	453.4	11.5	733.	2.21	496.9	1.72	1127.	5297.	997.
275.	2.85	453.4	9.6	688.	2.06	486.5	1.52	1036.	4729.	727.
276.	2.85	453.4	7.5	637.	1.89	474.8	1.35	940.	4085.	480.

ALT = 50000 MO=0.95

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
277.	3.01	460.6	14.5	796.	2.52	517.9	2.14	1270.	6497.	1524.
278.	3.01	460.6	13.6	778.	2.46	513.3	2.01	1220.	6239.	1355.
279.	3.01	460.6	11.9	739.	2.32	504.0	1.77	1127.	5724.	1053.
280.	3.01	460.6	9.9	695.	2.17	493.7	1.56	1036.	5143.	772.
281.	3.01	460.6	7.8	644.	1.99	482.1	1.38	939.	4477.	513.

FAN B

INSTALLATION EFFECTS

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NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, ICEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = SEA LEVEL MO = 0

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
1.	22009.	0.356	7825.	1670.	3.60	827.	133.8	5.18	89.2	91.3
2.	20773.	0.369	7673.	1672.	3.60	816.	131.0	5.10	89.2	91.0
3.	21806.	0.357	7790.	1671.	3.57	824.	133.9	5.15	89.2	91.0
4.	22057.	0.357	7867.	1675.	3.60	827.	133.8	5.18	89.2	91.3
5.	20610.	0.373	7684.	1678.	3.58	814.	131.1	5.08	89.2	90.8

ALT = SEA LEVEL MO = 0.25

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
6.	16136.	0.470	7583.	1660.	3.46	827.	134.8	5.37	88.7	90.1
7.	15157.	0.491	7446.	1662.	3.46	819.	132.2	5.30	88.7	89.9
8.	15964.	0.473	7557.	1662.	3.43	825.	134.9	5.34	88.7	89.8
9.	16179.	0.471	7623.	1664.	3.46	828.	134.8	5.37	88.7	90.2
10.	15026.	0.496	7459.	1668.	3.44	817.	132.2	5.29	88.7	89.7

ALT = SEA LEVEL MO = 0.4

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
11.	13457.	0.552	7430.	1642.	3.24	824.	136.1	5.65	87.8	88.1
12.	12569.	0.581	7298.	1644.	3.25	817.	133.5	5.60	87.8	87.9
13.	13295.	0.557	7406.	1644.	3.22	821.	136.2	5.63	87.8	87.9
14.	13496.	0.553	7469.	1646.	3.25	824.	136.1	5.66	87.8	88.2
15.	12441.	0.588	7311.	1650.	3.23	816.	133.5	5.58	87.8	87.7

ALT = 10000 MO = 0

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
16.	18133.	0.352	6382.	1663.	4.16	900.	107.1	4.99	91.4	97.6
17.	17278.	0.362	6263.	1664.	4.17	893.	105.0	4.94	91.4	97.5
18.	17934.	0.354	6348.	1664.	4.12	897.	107.2	4.96	91.4	97.3
19.	18184.	0.353	6424.	1668.	4.17	901.	107.1	4.99	91.4	97.7
20.	17133.	0.366	6274.	1671.	4.13	891.	105.1	4.92	91.4	97.3

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, ICEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = SEA LEVEL MO = 0

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
1.	14.70	518.7	67.6	912.	1.40	580.8	1.36	1335.	17135.	4873.
2.	14.40	518.7	66.2	913.	1.37	581.1	1.34	1339.	16073.	4699.
3.	14.70	518.7	66.9	910.	1.39	580.3	1.35	1337.	16998.	4808.
4.	14.70	518.7	67.7	913.	1.40	581.0	1.36	1339.	17172.	4885.
5.	14.40	518.7	65.7	911.	1.37	580.8	1.34	1346.	15964.	4647.

ALT = SEA LEVEL MO = 0.25

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
6.	15.35	525.2	68.3	914.	1.43	585.0	1.36	1327.	18664.	4923.
7.	15.04	525.2	67.0	914.	1.41	585.3	1.35	1331.	17632.	4757.
8.	15.35	525.2	67.7	912.	1.43	584.6	1.36	1330.	18533.	4859.
9.	15.35	525.2	68.4	914.	1.44	585.2	1.36	1330.	18701.	4934.
10.	15.04	525.2	66.4	912.	1.41	584.9	1.34	1337.	17537.	4705.

ALT = SEA LEVEL MO = 0.4

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
11.	16.41	535.3	69.2	915.	1.50	591.9	1.37	1312.	21051.	4977.
12.	16.08	535.3	67.9	915.	1.47	592.0	1.35	1316.	19985.	4812.
13.	16.41	535.3	68.6	913.	1.49	591.4	1.36	1315.	20920.	4914.
14.	16.41	535.3	69.3	915.	1.50	592.0	1.37	1315.	21088.	4989.
15.	16.08	535.3	67.4	914.	1.47	591.6	1.35	1322.	19885.	4759.

ALT = 10000 MO = 0

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
16.	10.11	483.0	52.6	887.	1.47	550.5	1.47	1310.	13810.	4323.
17.	9.90	483.0	51.6	887.	1.44	550.8	1.45	1313.	13099.	4179.
18.	10.11	483.0	51.9	885.	1.47	549.9	1.46	1312.	13681.	4253.
19.	10.11	483.0	52.7	888.	1.47	550.7	1.47	1315.	13847.	4336.
20.	9.90	483.0	51.0	885.	1.44	550.3	1.44	1320.	13011.	4122.

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = 10000 MO = 0.25

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
21.	13630.	0.453	6175.	1652.	3.99	894.	107.8	5.14	90.8	96.3
22.	12904.	0.470	6061.	1653.	4.00	888.	105.7	5.09	90.8	96.1
23.	13461.	0.457	6146.	1653.	3.95	892.	107.9	5.11	90.8	95.9
24.	13684.	0.455	6220.	1658.	4.00	895.	107.8	5.15	90.8	96.4
25.	12780.	0.475	6075.	1661.	3.97	886.	105.8	5.07	90.8	95.9

ALT = 10000 MO = 0.6

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
26.	9286.	0.634	5892.	1601.	3.30	861.	110.9	5.81	88.2	90.5
27.	8679.	0.667	5787.	1603.	3.30	858.	108.7	5.79	88.2	90.4
28.	9135.	0.642	5867.	1603.	3.27	859.	111.0	5.79	88.2	90.3
29.	9322.	0.636	5931.	1606.	3.30	862.	110.9	5.82	88.2	90.6
30.	8564.	0.677	5800.	1610.	3.28	857.	108.8	5.78	88.2	90.2

ALT = 20000 MO = 0.4

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
31.	8321.	0.501	4168.	1555.	3.95	907.	78.6	5.28	90.7	96.4
32.	7861.	0.521	4093.	1557.	3.95	902.	77.0	5.24	90.7	96.2
33.	8168.	0.507	4145.	1558.	3.90	903.	78.7	5.24	90.7	96.0
34.	8362.	0.503	4207.	1562.	3.95	908.	78.5	5.29	90.7	96.5
35.	7744.	0.530	4106.	1567.	3.91	900.	77.1	5.22	90.7	95.9

ALT = 20000 MO = 0.6

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
36.	7271.	0.598	4348.	1555.	3.64	897.	83.2	5.58	89.7	94.3
37.	6839.	0.624	4269.	1557.	3.65	895.	81.5	5.56	89.7	94.2
38.	7115.	0.608	4322.	1558.	3.60	894.	83.2	5.55	89.7	93.9
39.	7313.	0.600	4388.	1562.	3.65	898.	83.2	5.58	89.7	94.5
40.	6722.	0.637	4283.	1566.	3.61	893.	81.6	5.54	89.7	93.9

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = 10000 MO = 0.25

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
21.	10.56	489.1	53.1	888.	1.51	554.4	1.47	1301.	14820.	4351.
22.	10.35	489.1	52.0	888.	1.48	554.6	1.46	1304.	14092.	4206.
23.	10.56	489.1	52.4	886.	1.51	553.8	1.46	1304.	14703.	4282.
24.	10.56	489.1	53.2	889.	1.51	554.6	1.48	1306.	14867.	4365.
25.	10.35	489.1	51.5	886.	1.48	554.2	1.45	1312.	14012.	4151.

ALT = 10000 MO = 0.6

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
26.	12.89	517.9	55.5	893.	1.72	574.5	1.50	1261.	19998.	4485.
27.	12.64	517.9	54.4	893.	1.69	574.5	1.48	1264.	19189.	4339.
28.	12.89	517.9	54.9	891.	1.72	574.0	1.49	1264.	19878.	4416.
29.	12.89	517.9	55.6	894.	1.73	574.7	1.50	1265.	20032.	4498.
30.	12.64	517.9	53.9	892.	1.69	574.1	1.47	1271.	19102.	4283.

ALT = 20000 MO = 0.4

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
31.	7.54	461.7	37.6	839.	1.61	522.5	1.53	1217.	11492.	3189.
32.	7.39	461.7	36.8	839.	1.58	522.6	1.51	1220.	10978.	3086.
33.	7.54	461.7	37.0	835.	1.60	521.8	1.51	1221.	11382.	3123.
34.	7.54	461.7	37.6	839.	1.61	522.8	1.53	1223.	11528.	3203.
35.	7.39	461.7	36.3	836.	1.57	522.1	1.50	1230.	10897.	3032.

ALT = 20000 MO = 0.6

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
36.	8.62	479.7	40.3	853.	1.79	538.4	1.59	1213.	14333.	3519.
37.	8.44	479.7	39.5	853.	1.75	538.3	1.57	1216.	13778.	3408.
38.	8.62	479.7	39.7	850.	1.78	537.6	1.58	1216.	14210.	3449.
39.	8.62	479.7	40.4	853.	1.79	538.6	1.59	1218.	14374.	3533.
40.	8.44	479.7	39.0	850.	1.75	537.8	1.56	1225.	13691.	3351.

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = 20000 MO = 0.7

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
41.	6903.	0.648	4473.	1556.	3.47	886.	86.4	5.72	89.0	93.0
42.	6477.	0.678	4391.	1557.	3.48	886.	84.6	5.72	89.0	93.0
43.	6754.	0.658	4447.	1558.	3.43	884.	86.4	5.70	89.0	92.7
44.	6940.	0.650	4510.	1562.	3.48	887.	86.4	5.73	89.0	93.1
45.	6365.	0.692	4404.	1567.	3.44	884.	84.7	5.70	89.0	92.7

ALT = 30000 MO = 0.4

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
46.	6613.	0.484	3204.	1549.	4.60	970.	59.0	5.02	92.9	105.4
47.	6298.	0.499	3146.	1550.	4.61	967.	57.9	5.00	92.9	105.2
48.	6454.	0.491	3169.	1550.	4.51	965.	59.1	4.98	92.9	104.4
49.	6652.	0.488	3245.	1559.	4.62	971.	59.0	5.03	92.9	105.7
50.	6180.	0.510	3153.	1562.	4.54	964.	58.0	4.97	92.9	104.5

ALT = 30000 MO = 0.6

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
51.	5927.	0.568	3364.	1548.	4.27	953.	62.9	5.23	91.9	101.3
52.	5621.	0.587	3301.	1549.	4.27	953.	61.6	5.22	91.9	101.1
53.	5771.	0.577	3331.	1549.	4.19	950.	63.0	5.19	91.9	100.2
54.	5968.	0.570	3405.	1557.	4.28	955.	62.9	5.24	91.9	101.6
55.	5506.	0.601	3311.	1561.	4.21	950.	61.7	5.19	91.9	100.4

ALT = 30000 MO = 0.82

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
56.	5488.	0.659	3618.	1548.	3.82	922.	69.1	5.50	90.4	97.0
57.	5186.	0.684	3548.	1549.	3.82	922.	67.7	5.50	90.4	96.9
58.	5347.	0.672	3593.	1551.	3.77	920.	69.2	5.47	90.4	96.6
59.	5523.	0.662	3656.	1556.	3.83	923.	69.0	5.51	90.4	97.1
60.	5079.	0.701	3561.	1561.	3.78	920.	67.7	5.48	90.4	96.6

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = 20000 MO = 0.7

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
41.	9.37	491.4	42.2	862.	1.92	549.1	1.63	1211.	16255.	3755.
42.	9.18	491.4	41.4	862.	1.88	549.0	1.61	1214.	15677.	3633.
43.	9.37	491.4	41.6	859.	1.91	548.4	1.62	1215.	16142.	3681.
44.	9.37	491.4	42.3	863.	1.92	549.3	1.64	1216.	16290.	3769.
45.	9.18	491.4	40.9	860.	1.87	548.5	1.60	1223.	15598.	3573.

ALT = 30000 MO = 0.4

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
46.	4.87	424.9	27.4	807.	1.70	490.5	1.69	1199.	8378.	2631.
47.	4.78	424.9	26.9	807.	1.67	490.5	1.66	1201.	8048.	2548.
48.	4.87	424.9	26.8	803.	1.69	489.3	1.66	1201.	8278.	2552.
49.	4.87	424.9	27.5	808.	1.70	490.8	1.69	1207.	8407.	2646.
50.	4.78	424.9	26.4	803.	1.66	489.7	1.64	1213.	7977.	2486.

ALT = 30000 MO = 0.6

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
51.	5.57	441.5	29.6	822.	1.89	505.2	1.77	1196.	10273.	2921.
52.	5.46	441.5	29.0	822.	1.85	505.1	1.75	1198.	9907.	2829.
53.	5.57	441.5	29.0	818.	1.88	504.1	1.75	1198.	10164.	2845.
54.	5.57	441.5	29.7	822.	1.90	505.5	1.78	1203.	10309.	2936.
55.	5.46	441.5	28.5	818.	1.85	504.4	1.73	1209.	9834.	2768.

ALT = 30000 MO = 0.82

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
56.	6.79	467.3	33.1	844.	2.23	528.7	1.93	1194.	13466.	3411.
57.	6.65	467.3	32.5	844.	2.19	528.6	1.89	1195.	13040.	3302.
58.	6.79	467.3	32.5	841.	2.22	527.8	1.91	1197.	13368.	3333.
59.	6.79	467.3	33.2	845.	2.23	528.9	1.93	1201.	13498.	3426.
60.	6.65	467.3	32.0	841.	2.18	528.0	1.88	1206.	12971.	3239.

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = 35000 MO = 0.7

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
61.	5036.	0.595	2998.	1544.	4.40	966.	55.9	5.19	92.3	104.1
62.	4784.	0.615	2941.	1545.	4.41	966.	54.7	5.18	92.3	104.0
63.	4885.	0.607	2965.	1546.	4.32	962.	56.0	5.15	92.3	103.0
64.	5078.	0.599	3040.	1555.	4.42	968.	55.8	5.20	92.3	104.5
65.	4671.	0.631	2949.	1558.	4.33	963.	54.8	5.16	92.3	103.3

ALT = 35000 MO = 0.82

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
66.	490C.	0.641	3141.	1545.	4.14	949.	59.2	5.32	91.5	100.0
67.	4648.	0.663	3080.	1546.	4.14	949.	58.0	5.32	91.5	100.0
68.	4755.	0.655	3113.	1548.	4.07	945.	59.3	5.29	91.5	99.5
69.	4934.	0.645	3182.	1555.	4.16	950.	59.2	5.33	91.5	100.3
7C.	4541.	0.681	3092.	1559.	4.08	946.	58.1	5.30	91.5	99.7

ALT = 35000 MO = 0.95

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
71.	4749.	0.693	3293.	1544.	3.83	924.	63.0	5.52	90.4	97.2
72.	450C.	0.717	3229.	1545.	3.83	924.	61.7	5.52	90.4	97.2
73.	4613.	0.709	3270.	1548.	3.77	922.	63.1	5.49	90.4	96.8
74.	4784.	0.697	3333.	1554.	3.84	926.	63.0	5.53	90.4	97.3
75.	4396.	0.738	3242.	1558.	3.77	922.	61.8	5.49	90.4	96.9

ALT = 4C000 MO = 0.7

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
76.	4002.	0.597	2389.	1544.	4.44	968.	44.2	5.20	92.4	104.6
77.	3803.	0.617	2344.	1545.	4.44	968.	43.3	5.20	92.4	104.5
78.	3853.	0.612	2357.	1546.	4.33	963.	44.3	5.15	92.4	103.3
79.	4041.	0.601	2428.	1558.	4.46	970.	44.1	5.21	92.4	105.0
8C.	3691.	0.637	2350.	1562.	4.35	964.	43.4	5.16	92.4	103.6

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = 35000 MO = 0.7

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
61.	4.80	432.6	26.1	813.	2.08	497.3	1.96	1189.	9571.	2781.
62.	4.70	432.6	25.6	813.	2.04	497.3	1.92	1191.	9256.	2694.
63.	4.80	432.6	25.5	808.	2.07	496.2	1.92	1191.	9469.	2699.
64.	4.80	432.6	26.2	814.	2.09	497.7	1.96	1198.	9607.	2798.
65.	4.70	432.6	25.1	809.	2.03	496.5	1.90	1202.	9188.	2628.

ALT = 35000 MO = 0.82

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
66.	5.38	447.0	28.0	826.	2.29	510.4	2.07	1190.	11126.	3054.
67.	5.27	447.0	27.4	826.	2.25	510.4	2.03	1190.	10785.	2956.
68.	5.38	447.0	27.4	822.	2.28	509.5	2.03	1192.	11032.	2969.
69.	5.38	447.0	28.1	827.	2.30	510.7	2.08	1198.	11151.	3072.
70.	5.27	447.0	26.9	823.	2.24	509.8	2.00	1201.	10723.	2888.

ALT = 35000 MO = 0.95

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
71.	6.18	465.2	30.2	841.	2.57	526.6	2.20	1189.	13180.	3372.
72.	6.06	465.2	29.6	841.	2.52	526.6	2.16	1190.	12798.	3268.
73.	6.18	465.2	29.6	837.	2.56	525.8	2.17	1193.	13090.	3290.
74.	6.18	465.2	30.3	842.	2.57	526.9	2.21	1197.	13212.	3389.
75.	6.06	465.2	29.1	838.	2.51	526.0	2.13	1201.	12735.	3201.

ALT = 40000 MO = 0.7

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
76.	3.77	428.3	20.6	808.	2.09	492.9	1.97	1189.	7561.	2207.
77.	3.70	428.3	20.2	808.	2.05	492.8	1.93	1191.	7313.	2137.
78.	3.77	428.3	20.0	802.	2.07	491.5	1.93	1192.	7463.	2126.
79.	3.77	428.3	20.7	809.	2.10	493.3	1.98	1200.	7595.	2223.
80.	3.70	428.3	19.7	803.	2.04	491.9	1.90	1205.	7247.	2071.

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, ICEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = 40000 MO = 0.82

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
81.	3890.	0.642	2497.	1544.	4.17	950.	46.8	5.33	91.6	100.4
82.	3693.	0.664	2450.	1545.	4.18	950.	45.8	5.33	91.6	100.4
83.	3748.	0.659	2469.	1547.	4.08	946.	46.9	5.29	91.6	99.6
84.	3930.	0.646	2538.	1557.	4.19	952.	46.7	5.35	91.6	100.9
85.	3589.	0.686	2461.	1562.	4.09	947.	45.9	5.30	91.6	99.8

ALT = 40000 MO = 0.95

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
86.	3783.	0.693	2622.	1544.	3.86	926.	49.9	5.52	90.5	97.4
87.	3586.	0.717	2572.	1545.	3.86	926.	48.9	5.52	90.5	97.4
88.	3647.	0.712	2598.	1549.	3.78	923.	50.0	5.48	90.5	96.9
89.	3818.	0.697	2660.	1556.	3.88	928.	49.9	5.53	90.5	97.6
90.	3485.	0.742	2585.	1562.	3.80	924.	49.0	5.50	90.5	97.1

ALT = 45000 MO = 0.7

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
91.	3088.	0.604	1865.	1544.	4.38	963.	34.2	5.26	92.3	103.5
92.	2932.	0.624	1830.	1545.	4.38	962.	33.5	5.26	92.3	103.3
93.	2945.	0.624	1838.	1550.	4.24	957.	34.3	5.20	92.3	101.8
94.	3129.	0.609	1905.	1562.	4.40	965.	34.2	5.28	92.3	104.1
95.	2827.	0.651	1841.	1569.	4.26	958.	33.6	5.21	92.3	102.3

ALT = 45000 MO = 0.82

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
96.	3002.	0.650	1951.	1544.	4.12	945.	36.2	5.40	91.4	99.7
97.	2847.	0.673	1914.	1546.	4.12	945.	35.5	5.40	91.4	99.7
98.	2864.	0.673	1927.	1552.	4.00	940.	36.3	5.34	91.4	98.9
99.	3039.	0.655	1989.	1561.	4.14	947.	36.2	5.41	91.4	100.0
100.	2743.	0.702	1926.	1569.	4.02	941.	35.5	5.36	91.4	99.1

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NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = 40000 MO = 0.82

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
81.	4.23	442.6	22.1	821.	2.30	505.7	2.08	1189.	8779.	2421.
82.	4.15	442.6	21.6	821.	2.25	505.7	2.04	1190.	8513.	2343.
83.	4.23	442.6	21.5	816.	2.28	504.6	2.03	1192.	8690.	2337.
84.	4.23	442.6	22.2	822.	2.30	506.2	2.09	1200.	8815.	2438.
85.	4.15	442.6	21.1	816.	2.24	505.0	2.00	1205.	8457.	2277.

ALT = 40000 MO = 0.95

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
86.	4.86	460.6	23.9	836.	2.57	521.9	2.21	1189.	10409.	2678.
87.	4.77	460.6	23.4	836.	2.52	521.9	2.17	1190.	10107.	2596.
88.	4.86	460.6	23.3	831.	2.56	520.9	2.17	1193.	10317.	2597.
89.	4.86	460.6	24.0	837.	2.58	522.2	2.22	1199.	10441.	2696.
90.	4.77	460.6	22.9	832.	2.51	521.2	2.14	1205.	10047.	2531.

ALT = 45000 MO = 0.7

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
91.	2.97	428.3	16.0	807.	2.08	492.0	1.94	1190.	5903.	1694.
92.	2.91	428.3	15.7	807.	2.04	492.0	1.91	1192.	5708.	1639.
93.	2.97	428.3	15.4	800.	2.06	490.4	1.89	1196.	5809.	1616.
94.	2.97	428.3	16.1	808.	2.09	492.6	1.95	1205.	5938.	1711.
95.	2.91	428.3	15.2	801.	2.02	490.9	1.87	1213.	5647.	1577.

ALT = 45000 MO = 0.82

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
96.	3.33	442.6	17.1	819.	2.29	505.0	2.05	1190.	6862.	1858.
97.	3.26	442.6	16.8	819.	2.24	505.0	2.01	1191.	6652.	1797.
98.	3.33	442.6	16.5	813.	2.27	503.6	2.00	1197.	6773.	1777.
99.	3.33	442.6	17.2	820.	2.29	505.5	2.06	1204.	6893.	1875.
100.	3.26	442.6	16.3	814.	2.23	504.0	1.97	1212.	6588.	1735.

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = 45000 MO = 0.95

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
101.	2912.	0.703	2046.	1544.	3.81	921.	38.6	5.59	90.4	96.9
102.	2758.	0.728	2007.	1545.	3.81	921.	37.8	5.60	90.4	96.9
103.	2778.	0.728	2022.	1550.	3.71	917.	38.7	5.54	90.4	96.2
104.	2948.	0.707	2084.	1560.	3.83	923.	38.6	5.61	90.4	97.2
105.	2658.	0.760	2020.	1567.	3.72	918.	37.9	5.56	90.4	96.4

ALT = 50000 MO = 0.7

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
106.	2374.	0.613	1455.	1544.	4.30	956.	26.4	5.33	92.1	102.1
107.	2250.	0.634	1428.	1544.	4.30	956.	25.8	5.33	92.1	102.0
108.	2232.	0.640	1429.	1552.	4.13	949.	26.5	5.25	92.1	100.0
109.	2413.	0.619	1494.	1567.	4.33	959.	26.4	5.36	92.1	102.9
110.	2148.	0.671	1442.	1578.	4.15	951.	25.9	5.28	92.1	100.6

ALT = 50000 MO = 0.82

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
111.	2301.	0.661	1520.	1544.	4.05	938.	27.9	5.48	91.2	99.0
112.	2178.	0.684	1490.	1544.	4.04	938.	27.3	5.48	91.2	98.9
113.	2162.	0.691	1495.	1553.	3.89	931.	28.0	5.41	91.2	97.9
114.	2337.	0.666	1557.	1565.	4.07	941.	27.9	5.50	91.2	99.3
115.	2077.	0.724	1504.	1577.	3.91	933.	27.4	5.43	91.2	98.2

ALT = 50000 MO = 0.95

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
116.	2230.	0.714	1593.	1544.	3.74	915.	29.7	5.68	90.2	96.3
117.	2110.	0.741	1562.	1545.	3.74	914.	29.1	5.69	90.2	96.3
118.	2093.	0.748	1565.	1551.	3.61	909.	29.8	5.61	90.2	95.4
119.	2264.	0.720	1630.	1564.	3.76	917.	29.7	5.70	90.2	96.6
120.	2007.	0.784	1573.	1572.	3.62	911.	29.2	5.64	90.2	95.7

NASA QUIET ENGINE FAN B
1962 U.S. STANDARD ATMOSPHERE, ICEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = 45000 MO = 0.95

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
101.	3.82	460.6	18.5	834.	2.56	521.1	2.18	1190.	8132.	2056.
102.	3.75	460.6	18.1	834.	2.51	521.1	2.14	1191.	7894.	1991.
103.	3.82	460.6	17.9	828.	2.54	519.8	2.13	1196.	8043.	1974.
104.	3.82	460.6	18.6	835.	2.57	521.5	2.19	1203.	8164.	2073.
105.	3.75	460.6	17.6	829.	2.50	520.2	2.10	1210.	7836.	1926.

ALT = 50000 MO = 0.7

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
106.	2.33	428.3	12.4	805.	2.07	491.0	1.91	1191.	4602.	1294.
107.	2.29	428.3	12.1	805.	2.03	491.0	1.87	1192.	4448.	1251.
108.	2.33	428.3	11.8	797.	2.04	488.9	1.85	1200.	4508.	1217.
109.	2.33	428.3	12.5	807.	2.08	491.8	1.92	1210.	4635.	1310.
110.	2.29	428.3	11.6	798.	2.01	489.6	1.83	1222.	4389.	1191.

ALT = 50000 MO = 0.82

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
111.	2.62	442.6	13.2	818.	2.28	504.0	2.01	1191.	5351.	1415.
112.	2.56	442.6	12.9	818.	2.23	503.9	1.97	1192.	5182.	1370.
113.	2.62	442.6	12.6	810.	2.25	502.1	1.95	1200.	5255.	1337.
114.	2.62	442.6	13.3	819.	2.28	504.6	2.02	1208.	5382.	1432.
115.	2.56	442.6	12.5	811.	2.21	502.7	1.92	1220.	5119.	1309.

ALT = 50000 MO = 0.95

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
116.	3.01	460.6	14.3	832.	2.55	520.1	2.14	1191.	6344.	1567.
117.	2.95	460.6	14.0	832.	2.50	520.1	2.10	1192.	6158.	1517.
118.	3.01	460.6	13.7	825.	2.52	518.4	2.07	1197.	6252.	1485.
119.	3.01	460.6	14.4	833.	2.56	520.7	2.15	1207.	6375.	1583.
120.	2.95	460.6	13.5	826.	2.48	518.9	2.04	1216.	6098.	1451.

FAN C

STANDARD DAY PERFORMANCE

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY,NO AIR BLEED OR POWER EXTRACTION

ALT = SEA LEVEL MO=0

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
1.	22000.	0.382	8403.	1743.	3.77	808.	134.8	4.99	88.5	90.4
2.	20003.	0.378	7562.	1686.	3.51	771.	127.7	5.04	87.6	87.1
3.	17998.	0.374	6739.	1626.	3.25	733.	120.6	5.08	86.7	83.6
4.	16004.	0.372	5953.	1562.	3.00	692.	113.4	5.10	85.7	79.9
5.	14004.	0.371	5201.	1497.	2.74	649.	105.8	5.13	84.6	75.9
6.	12001.	0.372	4467.	1427.	2.47	602.	97.7	5.16	83.3	71.2
7.	10000.	0.376	3760.	1355.	2.20	551.	89.2	5.17	81.9	66.1
8.	8001.	0.385	3084.	1279.	1.94	494.	80.2	5.16	80.1	59.9
9.	6000.	0.406	2436.	1210.	1.69	429.	69.2	5.20	77.9	52.6
10.	4000.	0.471	1886.	1159.	1.44	351.	57.2	5.13	75.0	42.5
11.	2001.	0.671	1343.	1123.	1.23	248.	41.9	4.92	69.7	28.8
12.	1000.	1.004	1004.	1104.	1.12	176.	31.3	4.62	63.3	16.7

ALT = SEA LEVEL MO=0.25

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
13.	16013.	0.504	8078.	1728.	3.60	800.	135.3	5.14	88.0	89.3
14.	15002.	0.506	7584.	1694.	3.45	780.	131.1	5.18	87.4	87.3
15.	12000.	0.513	6158.	1585.	3.01	716.	118.4	5.28	85.8	81.1
16.	9002.	0.534	4810.	1467.	2.55	643.	104.1	5.41	83.7	73.7
17.	6001.	0.584	3505.	1333.	2.07	557.	88.2	5.55	81.1	64.5
18.	3000.	0.748	2243.	1190.	1.58	445.	67.8	5.81	77.1	50.8
19.	1000.	1.436	1437.	1117.	1.24	336.	47.4	6.36	71.4	35.7

ALT = SEA LEVEL MO=0.4

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
20.	13099.	0.596	7809.	1702.	3.36	787.	135.9	5.37	87.1	87.3
21.	12003.	0.601	7219.	1661.	3.19	765.	130.7	5.43	86.5	85.0
22.	9001.	0.631	5680.	1539.	2.72	699.	116.0	5.62	84.6	78.2
23.	6003.	0.696	4180.	1400.	2.22	621.	99.0	5.90	82.1	69.4
24.	3001.	0.905	2715.	1238.	1.69	524.	78.5	6.34	78.4	57.4
25.	1000.	1.726	1727.	1129.	1.31	434.	58.3	7.20	73.8	45.1

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY,NO AIR BLEED OR POWER EXTRACTION

ALT = SEA LEVEL MO=0

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
1.	14.70	518.7	73.5	888.	1.49	596.0	1.18	1346.	18319.	3681.
2.	14.70	518.7	69.4	871.	1.44	589.8	1.16	1315.	16748.	3255.
3.	14.70	518.7	65.2	852.	1.39	583.3	1.14	1282.	15147.	2851.
4.	14.70	518.7	61.0	832.	1.35	576.8	1.12	1248.	13533.	2471.
5.	14.70	518.7	56.5	811.	1.30	570.1	1.10	1214.	11899.	2105.
6.	14.70	518.7	51.7	787.	1.26	563.1	1.08	1179.	10244.	1757.
7.	14.70	518.7	46.7	762.	1.21	555.9	1.07	1143.	8572.	1428.
8.	14.70	518.7	41.5	734.	1.17	548.6	1.05	1107.	6879.	1122.
9.	14.70	518.7	35.7	705.	1.12	541.2	1.04	1078.	5181.	820.
10.	14.70	518.7	29.7	673.	1.08	534.1	1.03	1068.	3445.	555.
11.	14.70	518.7	21.9	633.	1.04	527.3	1.01	1073.	1703.	298.
12.	14.70	518.7	16.6	604.	1.02	523.1	1.01	1081.	835.	165.

ALT = SEA LEVEL MO=0.25

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
13.	15.35	525.2	74.2	889.	1.52	599.5	1.18	1335.	19528.	3697.
14.	15.35	525.2	71.7	879.	1.49	595.8	1.17	1316.	18593.	3437.
15.	15.35	525.2	64.1	844.	1.41	584.2	1.13	1256.	15737.	2714.
16.	15.35	525.2	55.6	805.	1.33	571.8	1.10	1196.	12765.	2030.
17.	15.35	525.2	46.2	758.	1.24	558.5	1.07	1129.	9617.	1399.
18.	15.35	525.2	35.0	703.	1.15	544.0	1.04	1065.	6212.	797.
19.	15.35	525.2	24.6	651.	1.09	533.5	1.02	1054.	3633.	397.

ALT = SEA LEVEL MO=0.4

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
20.	16.41	535.3	75.0	889.	1.58	605.1	1.18	1315.	21415.	3701.
21.	16.41	535.3	71.9	875.	1.55	600.5	1.17	1292.	20292.	3388.
22.	16.41	535.3	63.0	837.	1.45	587.5	1.13	1226.	17081.	2585.
23.	16.41	535.3	52.7	790.	1.35	573.2	1.09	1156.	13671.	1818.
24.	16.41	535.3	40.9	734.	1.25	557.7	1.05	1078.	9899.	1102.
25.	16.41	535.3	30.1	683.	1.17	546.0	1.03	1037.	7018.	614.

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = SEA LEVEL MO=0.5

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
26.	11342.	0.669	7589.	1678.	3.15	775.	136.3	5.58	86.4	85.6
27.	11001.	0.672	7390.	1664.	3.09	768.	134.6	5.60	86.2	84.8
28.	8998.	0.698	6284.	1581.	2.78	726.	124.2	5.77	84.9	80.3
29.	6000.	0.777	4661.	1442.	2.28	655.	106.5	6.12	82.4	72.0
30.	3000.	1.022	3066.	1273.	1.74	568.	85.8	6.66	79.0	61.2
31.	1000.	1.967	1968.	1145.	1.36	491.	66.3	7.58	75.0	50.4

ALT = SEA LEVEL MO=0.6

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
32.	9710.	0.753	7309.	1648.	2.91	759.	136.8	5.83	85.5	83.4
33.	8001.	0.790	6321.	1575.	2.64	724.	127.1	6.02	84.3	79.5
34.	6003.	0.859	5157.	1479.	2.30	681.	114.5	6.32	82.6	74.1
35.	4002.	1.004	4017.	1370.	1.96	631.	101.1	6.69	80.6	67.9
36.	2000.	1.425	2850.	1241.	1.59	572.	84.9	7.30	78.0	60.1

ALT = 10000 MO=0

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
37.	18504.	0.376	6949.	1757.	4.38	890.	107.3	4.91	90.5	97.6
38.	15001.	0.366	5488.	1626.	3.75	804.	95.5	5.00	88.4	90.1
39.	12000.	0.359	4307.	1501.	3.19	722.	84.7	5.07	86.4	82.6
40.	8998.	0.358	3217.	1366.	2.62	628.	72.9	5.14	84.1	73.8
41.	5999.	0.370	2220.	1228.	2.04	515.	59.2	5.19	80.7	62.3
42.	3001.	0.447	1341.	1091.	1.49	366.	42.2	5.17	75.6	44.6
43.	1000.	0.797	797.	1037.	1.17	212.	26.0	4.80	67.2	22.9

ALT = 10000 MO=0.25

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
44.	13829.	0.482	6662.	1737.	4.20	876.	107.9	5.01	90.0	96.2
45.	12000.	0.482	5788.	1659.	3.82	828.	100.7	5.08	88.7	91.8
46.	8999.	0.489	4401.	1517.	3.18	740.	87.8	5.23	86.4	83.4
47.	6001.	0.516	3097.	1354.	2.52	636.	73.4	5.41	83.6	73.0
48.	3000.	0.627	1880.	1177.	1.80	500.	55.2	5.69	79.1	57.8
49.	1000.	1.103	1104.	1052.	1.32	366.	37.9	6.14	73.3	40.0

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = SEA LEVEL MO=0.5

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
26.	17.44	544.7	75.6	887.	1.64	610.5	1.18	1297.	23206.	3702.
27.	17.44	544.7	74.6	883.	1.63	609.0	1.18	1289.	22835.	3595.
28.	17.44	544.7	68.2	857.	1.56	599.9	1.15	1244.	20588.	3004.
29.	17.44	544.7	57.4	810.	1.45	585.3	1.11	1172.	17026.	2143.
30.	17.44	544.7	45.2	755.	1.33	569.3	1.07	1089.	13073.	1347.
31.	17.44	544.7	34.4	708.	1.25	557.5	1.04	1031.	10060.	806.

ALT = SEA LEVEL MO=0.6

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
32.	18.75	556.1	76.3	886.	1.71	617.4	1.18	1275.	25481.	3699.
33.	18.75	556.1	70.2	863.	1.64	609.3	1.16	1236.	23446.	3149.
34.	18.75	556.1	62.4	831.	1.57	599.3	1.13	1186.	20955.	2514.
35.	18.75	556.1	54.3	795.	1.48	588.7	1.10	1130.	18273.	1921.
36.	18.75	556.1	44.7	758.	1.40	577.1	1.07	1065.	15353.	1338.

ALT = 10000 MO=0

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
37.	10.11	483.0	57.1	868.	1.60	568.7	1.23	1326.	15231.	3273.
38.	10.11	483.0	50.4	829.	1.48	554.7	1.18	1252.	12503.	2498.
39.	10.11	483.0	44.2	791.	1.38	541.7	1.13	1184.	10113.	1887.
40.	10.11	483.0	37.5	747.	1.28	528.0	1.09	1114.	7663.	1336.
41.	10.11	483.0	29.9	693.	1.18	513.5	1.06	1051.	5156.	844.
42.	10.11	483.0	21.2	633.	1.09	498.6	1.03	998.	2590.	411.
43.	10.11	483.0	13.3	576.	1.03	489.3	1.01	1001.	846.	154.

ALT = 10000 MO=0.25

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
44.	10.56	489.1	57.7	867.	1.64	571.9	1.23	1311.	15979.	3281.
45.	10.56	489.1	53.6	844.	1.56	563.3	1.20	1267.	14335.	2796.
46.	10.56	489.1	46.2	801.	1.44	548.1	1.14	1189.	11545.	2040.
47.	10.56	489.1	37.8	748.	1.32	531.5	1.10	1104.	8585.	1356.
48.	10.56	489.1	27.8	679.	1.19	512.8	1.05	1024.	5365.	731.
49.	10.56	489.1	19.0	619.	1.10	499.2	1.02	979.	2927.	338.

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 10000 MO=0.4

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
50.	11548.	0.560	6463.	1708.	3.92	856.	108.9	5.16	89.1	94.1
51.	8998.	0.571	5134.	1587.	3.37	787.	97.1	5.35	87.2	87.3
52.	6001.	0.610	3659.	1421.	2.69	692.	81.9	5.62	84.5	77.5
53.	3000.	0.747	2241.	1227.	1.94	571.	63.1	6.10	80.2	63.5
54.	1000.	1.334	1334.	1081.	1.41	457.	45.4	6.89	75.3	48.1

ALT = 10000 MO=0.5

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
55.	10175.	0.619	6299.	1683.	3.68	839.	109.5	5.32	88.3	92.2
56.	8998.	0.627	5644.	1625.	3.43	808.	103.7	5.43	87.4	89.1
57.	6000.	0.675	4051.	1460.	2.75	720.	87.8	5.76	84.8	79.7
58.	3000.	0.835	2506.	1259.	2.00	611.	68.6	6.34	80.8	66.6
59.	1000.	1.510	1510.	1107.	1.45	510.	50.6	7.31	76.1	53.1

ALT = 10000 MO=0.6

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
60.	8903.	0.685	6097.	1653.	3.41	817.	110.1	5.52	87.4	89.9
61.	7998.	0.696	5568.	1606.	3.21	794.	105.3	5.62	86.7	87.4
62.	5999.	0.741	4443.	1494.	2.76	740.	94.0	5.91	84.9	81.2
63.	4000.	0.833	3332.	1365.	2.28	676.	81.2	6.32	82.5	73.6
64.	2000.	1.120	2241.	1212.	1.77	600.	66.3	6.95	79.3	63.9

ALT = 10000 MO=0.729

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
65.	7397.	0.784	5796.	1611.	3.03	785.	110.8	5.84	86.1	86.2
66.	6999.	0.794	5556.	1589.	2.95	775.	108.4	5.90	85.7	85.1
67.	5999.	0.827	4959.	1533.	2.73	751.	102.3	6.08	84.8	82.2
68.	4000.	0.940	3760.	1406.	2.27	696.	89.0	6.55	82.5	75.4
69.	2000.	1.285	2571.	1251.	1.78	631.	73.9	7.24	79.6	66.8

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NC AIR BLEED OR POWER EXTRACTION

ALT = 10000 MO=0.4

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
50.	11.29	498.5	58.6	867.	1.70	577.3	1.24	1289.	17242.	3297.
51.	11.29	498.5	51.8	830.	1.58	563.6	1.18	1221.	14716.	2543.
52.	11.29	498.5	42.9	777.	1.44	546.1	1.12	1132.	11539.	1729.
53.	11.29	498.5	32.1	708.	1.29	526.2	1.07	1038.	8021.	979.
54.	11.29	498.5	22.9	650.	1.19	511.4	1.04	978.	5300.	502.

ALT = 10000 MO=0.5

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
55.	11.99	507.3	59.3	867.	1.76	582.2	1.24	1269.	18464.	3303.
56.	11.99	507.3	55.9	849.	1.70	575.6	1.21	1237.	17243.	2922.
57.	11.99	507.3	46.5	796.	1.55	557.7	1.14	1147.	13941.	2013.
58.	11.99	507.3	35.3	728.	1.39	537.3	1.08	1046.	10265.	1174.
59.	11.99	507.3	25.6	671.	1.27	521.9	1.05	982.	7407.	639.

ALT = 10000 MO=0.6

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
60.	12.89	517.9	59.9	866.	1.83	588.5	1.24	1247.	20024.	3304.
61.	12.89	517.9	57.1	851.	1.78	583.2	1.22	1221.	19031.	2992.
62.	12.89	517.9	50.3	815.	1.67	570.8	1.17	1159.	16726.	2328.
63.	12.89	517.9	42.7	773.	1.56	557.3	1.12	1093.	14248.	1694.
64.	12.89	517.9	34.1	723.	1.44	542.6	1.08	1017.	11493.	1105.

ALT = 10000 MO=0.729

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
65.	14.40	534.6	60.8	863.	1.96	599.0	1.24	1216.	22589.	3304.
66.	14.40	534.6	59.4	856.	1.94	596.6	1.23	1204.	22119.	3155.
67.	14.40	534.6	55.7	839.	1.88	590.2	1.20	1174.	20912.	2786.
68.	14.40	534.6	47.6	798.	1.75	576.7	1.15	1107.	18348.	2070.
69.	14.40	534.6	38.5	751.	1.62	562.1	1.10	1027.	15482.	1399.

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NC AIR BLEED OR POWER EXTRACTION

ALT = 20000 MO=0

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
70.	12034.	0.361	4341.	1633.	4.31	878.	72.9	4.96	90.2	96.6
71.	10000.	0.353	3528.	1525.	3.75	802.	65.8	5.03	88.4	90.0
72.	8000.	0.349	2789.	1413.	3.19	720.	58.2	5.12	86.3	82.5
73.	5999.	0.349	2094.	1282.	2.63	626.	50.2	5.18	84.0	73.7
74.	4000.	0.364	1455.	1140.	2.04	514.	41.0	5.20	80.7	62.3
75.	2001.	0.444	889.	1013.	1.49	365.	29.2	5.18	75.6	44.5

ALT = 20000 MO=0.267

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
76.	9213.	0.471	4335.	1634.	4.23	880.	75.2	5.04	90.0	96.5
77.	8000.	0.472	3776.	1561.	3.85	832.	70.2	5.11	88.8	92.2
78.	6000.	0.482	2891.	1431.	3.21	744.	61.2	5.28	86.5	83.8
79.	4000.	0.513	2054.	1279.	2.54	641.	51.1	5.48	83.6	73.5
80.	2001.	0.629	1259.	1097.	1.83	508.	38.9	5.74	79.2	58.5

ALT = 20000 MO=0.4

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
81.	8337.	0.534	4451.	1634.	4.13	879.	78.1	5.13	89.8	96.2
82.	7000.	0.540	3784.	1550.	3.70	827.	72.0	5.25	88.3	91.4
83.	6000.	0.551	3305.	1486.	3.37	785.	66.9	5.38	87.1	87.2
84.	4000.	0.593	2371.	1336.	2.69	690.	56.2	5.68	84.3	77.4
85.	2000.	0.734	1467.	1142.	1.94	571.	43.6	6.11	80.2	63.4

ALT = 20000 MO=0.5

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
86.	7827.	0.584	4574.	1633.	4.02	876.	80.9	5.20	89.5	95.8
87.	7000.	0.591	4137.	1581.	3.76	846.	77.0	5.29	88.6	92.9
88.	5998.	0.603	3620.	1516.	3.43	807.	71.7	5.44	87.4	89.0
89.	4000.	0.653	2613.	1367.	2.75	719.	60.5	5.80	84.7	79.6
90.	2000.	0.818	1636.	1175.	2.00	609.	47.3	6.38	80.7	66.5

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 20000 MO=0

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
70.	6.75	447.3	37.7	802.	1.59	525.2	1.22	1233.	9930.	2104.
71.	6.75	447.3	33.8	769.	1.48	513.7	1.18	1172.	8341.	1659.
72.	6.75	447.3	29.6	734.	1.38	501.7	1.13	1113.	6749.	1251.
73.	6.75	447.3	25.0	692.	1.28	489.1	1.09	1044.	5112.	886.
74.	6.75	447.3	20.0	643.	1.18	475.5	1.06	974.	3438.	561.
75.	6.75	447.3	14.2	587.	1.09	461.7	1.03	926.	1727.	274.

ALT = 20000 MO=0.267

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
76.	7.10	453.8	39.1	809.	1.65	531.3	1.24	1228.	10896.	2227.
77.	7.10	453.8	36.3	787.	1.58	523.3	1.20	1187.	9796.	1902.
78.	7.10	453.8	31.3	746.	1.45	509.2	1.15	1117.	7920.	1390.
79.	7.10	453.8	25.6	696.	1.33	493.6	1.10	1038.	5927.	925.
80.	7.10	453.8	19.0	633.	1.20	476.2	1.05	950.	3754.	504.

ALT = 20000 MO=0.4

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
81.	7.54	461.7	40.8	818.	1.74	539.0	1.26	1222.	12125.	2382.
82.	7.54	461.7	37.4	792.	1.65	529.5	1.21	1174.	10823.	1982.
83.	7.54	461.7	34.6	770.	1.58	522.0	1.18	1141.	9822.	1688.
84.	7.54	461.7	28.6	720.	1.44	505.7	1.12	1063.	7699.	1145.
85.	7.54	461.7	21.5	656.	1.29	487.3	1.07	965.	5352.	651.

ALT = 20000 MO=0.5

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
86.	8.01	469.8	42.5	826.	1.83	546.9	1.27	1215.	13377.	2540.
87.	8.01	469.8	40.3	809.	1.77	540.9	1.24	1186.	12543.	2268.
88.	8.01	469.8	37.4	788.	1.70	533.1	1.21	1151.	11505.	1943.
89.	8.01	469.8	31.1	738.	1.55	516.4	1.14	1072.	9302.	1336.
90.	8.01	469.8	23.6	675.	1.39	497.6	1.08	976.	6848.	780.

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NC AIR BLEED OR PCWER EXTRACTION

ALT = 20000 MO=0.6

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
91.	7442.	0.636	4731.	1635.	3.90	869.	84.4	5.28	89.1	95.1
92.	7001.	0.640	4483.	1606.	3.76	854.	82.2	5.33	88.7	93.6
93.	5999.	0.655	3932.	1542.	3.44	819.	76.7	5.50	87.5	90.1
94.	4000.	0.716	2862.	1396.	2.77	738.	64.9	5.94	84.8	81.1
95.	2000.	0.908	1815.	1210.	2.03	639.	51.1	6.63	80.9	69.0

ALT = 20000 MO=0.7

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
96.	7136.	0.688	4906.	1639.	3.74	859.	88.0	5.39	88.6	94.1
97.	5999.	0.706	4235.	1563.	3.40	821.	81.9	5.57	87.4	90.3
98.	4999.	0.733	3667.	1492.	3.08	787.	76.1	5.77	86.2	86.5
99.	3000.	0.850	2550.	1336.	2.40	707.	62.7	6.38	83.2	77.0
100.	1000.	1.436	1436.	1116.	1.65	605.	46.7	7.48	78.5	63.6

ALT = 20000 MO=0.892

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
101.	6443.	0.794	5115.	1631.	3.32	827.	94.8	5.72	87.2	91.0
102.	5001.	0.838	4191.	1528.	2.91	782.	86.0	6.01	85.7	86.0
103.	4000.	0.891	3562.	1454.	2.62	749.	79.3	6.28	84.3	82.0
104.	3000.	0.981	2942.	1369.	2.30	713.	71.8	6.65	82.7	77.5
105.	1000.	1.720	1720.	1166.	1.62	631.	54.7	7.89	78.5	66.3

ALT = 30000 MO=0.333

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
106.	6772.	0.486	3290.	1629.	4.76	939.	56.1	4.96	91.7	103.3
107.	6000.	0.480	2880.	1557.	4.36	899.	52.6	5.08	90.4	98.2
108.	5000.	0.486	2431.	1465.	3.88	839.	48.4	5.18	88.8	92.8
109.	3999.	0.499	1994.	1367.	3.38	774.	43.5	5.33	87.1	86.5
110.	2000.	0.580	1160.	1136.	2.30	614.	32.5	5.72	82.4	69.7

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 20000 MO=0.6

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
91.	8.62	479.7	44.6	835.	1.95	556.8	1.30	1211.	14953.	2737.
92.	8.62	479.7	43.4	827.	1.92	553.6	1.28	1193.	14494.	2581.
93.	8.62	479.7	40.4	806.	1.84	545.6	1.24	1158.	13433.	2223.
94.	8.62	479.7	33.6	756.	1.67	528.7	1.17	1082.	11160.	1546.
95.	8.62	479.7	25.7	693.	1.50	509.6	1.10	988.	8611.	926.

ALT = 20000 MO=0.7

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
96.	9.37	491.4	47.0	845.	2.10	568.2	1.33	1208.	16878.	2961.
97.	9.37	491.4	43.5	822.	2.00	559.4	1.28	1164.	15620.	2524.
98.	9.37	491.4	40.1	799.	1.92	551.2	1.23	1124.	14481.	2150.
99.	9.37	491.4	32.5	745.	1.73	533.1	1.16	1044.	12023.	1432.
100.	9.37	491.4	23.3	678.	1.54	512.5	1.09	933.	9176.	776.

ALT = 20000 MO=0.892

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
101.	11.33	518.8	51.7	862.	2.44	592.4	1.38	1193.	21408.	3375.
102.	11.33	518.8	46.3	830.	2.31	581.0	1.30	1133.	19606.	2734.
103.	11.33	518.8	42.3	806.	2.21	572.6	1.26	1090.	18295.	2301.
104.	11.33	518.8	37.9	778.	2.10	563.5	1.21	1047.	16920.	1881.
105.	11.33	518.8	28.0	716.	1.87	543.5	1.13	945.	13900.	1095.

ALT = 30000 MO=0.333

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
106.	4.71	420.9	28.5	782.	1.80	503.9	1.31	1201.	8387.	1828.
107.	4.71	420.9	26.6	760.	1.73	495.4	1.26	1159.	7721.	1575.
108.	4.71	420.9	24.3	734.	1.63	485.9	1.21	1106.	6784.	1294.
109.	4.71	420.9	21.6	704.	1.53	475.6	1.17	1052.	5819.	1019.
110.	4.71	420.9	15.6	630.	1.32	452.3	1.09	933.	3725.	527.

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 30000 MO=0.4

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
111.	6478.	0.514	3330.	1629.	4.67	936.	57.0	5.02	91.4	102.6
112.	5000.	0.517	2587.	1491.	3.95	855.	50.4	5.21	89.1	94.0
113.	3999.	0.532	2126.	1392.	3.45	793.	45.5	5.37	87.3	88.0
114.	3000.	0.560	1680.	1282.	2.92	722.	40.3	5.57	85.4	80.7
115.	1000.	0.817	817.	1012.	1.76	536.	26.9	6.29	79.0	59.1

ALT = 30000 MO=0.5

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
116.	6144.	0.557	3421.	1630.	4.54	930.	58.9	5.10	91.0	101.6
117.	5000.	0.563	2816.	1524.	4.00	871.	53.7	5.26	89.3	95.4
118.	4000.	0.581	2325.	1425.	3.51	813.	48.7	5.45	87.6	89.7
119.	3000.	0.614	1843.	1315.	2.98	748.	43.1	5.69	85.7	82.8
120.	1000.	0.911	911.	1042.	1.82	579.	29.3	6.61	79.5	62.7

ALT = 30000 MO=0.6

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
121.	5914.	0.600	3548.	1637.	4.40	922.	61.2	5.19	90.6	100.6
122.	5000.	0.609	3045.	1550.	3.99	877.	57.1	5.31	89.3	95.9
123.	4000.	0.630	2522.	1453.	3.51	824.	51.9	5.52	87.7	90.7
124.	3001.	0.669	2007.	1342.	3.00	765.	46.2	5.80	85.8	84.2
125.	1000.	1.010	1010.	1069.	1.86	612.	32.0	6.86	79.9	65.5

ALT = 30000 MO=0.7

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
126.	5679.	0.643	3654.	1633.	4.21	909.	63.8	5.29	90.0	99.2
127.	5000.	0.654	3271.	1573.	3.92	876.	60.5	5.39	89.1	95.9
128.	4000.	0.678	2710.	1475.	3.46	826.	55.3	5.59	87.5	90.9
129.	3000.	0.724	2172.	1366.	2.97	772.	49.4	5.90	85.7	84.8
130.	1000.	1.112	1112.	1095.	1.88	636.	34.7	7.09	80.0	67.7

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 30000 MO=0.4

CASE	P2	T2	PF	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
111.	4.87	424.9	29.1	785.	1.86	507.5	1.31	1199.	8840.	1882.
112.	4.87	424.9	25.5	745.	1.70	492.4	1.23	1118.	7460.	1416.
113.	4.87	424.9	22.8	716.	1.59	481.8	1.19	1063.	6469.	1122.
114.	4.87	424.9	19.9	682.	1.49	470.4	1.14	1004.	5426.	848.
115.	4.87	424.9	12.7	591.	1.26	444.3	1.06	871.	3080.	351.

ALT = 30000 MO=0.5

CASE	P2	T2	PF	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
116.	5.18	432.4	30.2	791.	1.96	514.5	1.34	1196.	9698.	1995.
117.	5.18	432.4	27.4	761.	1.83	502.9	1.27	1132.	8586.	1612.
118.	5.18	432.4	24.6	732.	1.71	492.1	1.21	1077.	7562.	1289.
119.	5.18	432.4	21.5	698.	1.60	480.4	1.16	1017.	6481.	982.
120.	5.18	432.4	14.0	607.	1.35	453.6	1.07	880.	4028.	425.

ALT = 30000 MO=0.6

CASE	P2	T2	PF	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
121.	5.57	441.5	31.7	799.	2.09	523.5	1.36	1195.	10800.	2142.
122.	5.57	441.5	29.4	776.	1.98	514.4	1.31	1143.	9860.	1821.
123.	5.57	441.5	26.5	748.	1.85	503.6	1.25	1087.	8809.	1470.
124.	5.57	441.5	23.3	713.	1.73	491.8	1.19	1025.	7698.	1130.
125.	5.57	441.5	15.4	625.	1.46	464.6	1.09	887.	5151.	512.

ALT = 30000 MO=0.7

CASE	P2	T2	PF	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
126.	6.06	452.2	33.3	807.	2.24	533.5	1.39	1188.	12067.	2301.
127.	6.06	452.2	31.5	790.	2.15	526.9	1.35	1151.	11330.	2043.
128.	6.06	452.2	28.5	762.	2.02	516.3	1.28	1094.	10225.	1665.
129.	6.06	452.2	25.1	729.	1.89	504.5	1.22	1033.	9081.	1297.
130.	6.06	452.2	16.9	642.	1.59	477.2	1.11	893.	6462.	612.

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 30000 MO=0.82

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
131.	5464.	0.697	3807.	1628.	3.97	892.	67.7	5.41	89.3	97.4
132.	5000.	0.707	3532.	1588.	3.78	870.	65.3	5.48	88.7	95.3
133.	3999.	0.737	2946.	1500.	3.34	822.	59.4	5.73	87.2	90.5
134.	3000.	0.786	2359.	1389.	2.88	771.	53.3	6.04	85.4	84.8
135.	1000.	1.234	1234.	1123.	1.86	652.	38.1	7.33	80.0	69.3

ALT = 30000 MO=0.9

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
136.	5355.	0.734	3933.	1628.	3.81	879.	70.7	5.50	88.8	96.1
137.	4999.	0.743	3716.	1599.	3.67	863.	68.7	5.57	88.3	94.6
138.	3999.	0.774	3095.	1506.	3.25	817.	62.7	5.81	86.9	90.0
139.	3001.	0.830	2490.	1406.	2.80	768.	56.0	6.17	85.0	84.4
140.	1000.	1.309	1309.	1138.	1.82	654.	40.4	7.47	79.8	69.6

ALT = 30000 MO=0.95

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
141.	5261.	0.759	3995.	1624.	3.69	869.	72.6	5.57	88.5	95.2
142.	5002.	0.765	3829.	1603.	3.59	858.	71.0	5.63	88.1	94.1
143.	4000.	0.799	3195.	1512.	3.18	814.	64.8	5.88	86.7	89.6
144.	3001.	0.858	2575.	1414.	2.74	765.	57.9	6.25	84.8	84.1
145.	1000.	1.353	1353.	1145.	1.79	654.	41.9	7.58	79.6	69.6

ALT = 35000 MO=0.374

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
146.	5555.	0.513	2848.	1626.	5.05	951.	48.1	4.80	92.7	107.1
147.	4999.	0.490	2449.	1542.	4.56	923.	44.6	5.07	91.0	100.8
148.	4000.	0.499	1995.	1431.	3.96	852.	40.3	5.21	89.1	93.8
149.	3000.	0.518	1555.	1309.	3.32	771.	35.3	5.41	86.8	85.9
150.	1000.	0.717	717.	1005.	1.91	555.	22.9	6.10	79.9	62.1

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 30000 MO=0.82

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
131.	6.79	467.3	35.8	819.	2.46	547.6	1.44	1177.	13932.	2543.
132.	6.79	467.3	34.4	808.	2.39	543.3	1.41	1153.	13395.	2348.
133.	6.79	467.3	31.1	779.	2.26	532.7	1.33	1103.	12226.	1920.
134.	6.79	467.3	27.5	746.	2.11	521.2	1.26	1039.	11012.	1511.
135.	6.79	467.3	18.8	663.	1.79	494.3	1.13	899.	8298.	749.

ALT = 30000 MO=0.9

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
136.	7.38	478.7	37.6	829.	2.63	558.4	1.48	1172.	15421.	2736.
137.	7.38	478.7	36.5	820.	2.58	555.1	1.45	1155.	14995.	2573.
138.	7.38	478.7	33.1	791.	2.44	544.7	1.37	1100.	13785.	2116.
139.	7.38	478.7	29.2	758.	2.29	533.3	1.29	1044.	12514.	1669.
140.	7.38	478.7	20.1	677.	1.96	506.7	1.15	901.	9680.	849.

ALT = 30000 MO=0.95

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
141.	7.80	486.3	38.8	835.	2.75	565.4	1.50	1167.	16416.	2854.
142.	7.80	486.3	37.9	828.	2.71	562.9	1.48	1154.	16103.	2726.
143.	7.80	486.3	34.4	799.	2.57	552.6	1.39	1100.	14867.	2246.
144.	7.80	486.3	30.3	766.	2.41	541.2	1.31	1047.	13555.	1777.
145.	7.80	486.3	21.0	686.	2.07	514.9	1.16	901.	10633.	915.

ALT = 35000 MO=0.374

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
146.	3.81	404.9	23.9	767.	1.87	493.2	1.35	1187.	7065.	1647.
147.	3.81	404.9	22.3	744.	1.81	480.8	1.29	1138.	6673.	1391.
148.	3.81	404.9	19.9	712.	1.68	469.1	1.23	1073.	5734.	1093.
149.	3.81	404.9	17.2	675.	1.54	456.4	1.17	1007.	4750.	808.
150.	3.81	404.9	10.7	574.	1.27	426.5	1.06	853.	2531.	310.

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 35000 MO=0.4

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
151.	5483.	0.521	2857.	1624.	5.02	951.	48.4	4.83	92.6	107.2
152.	4999.	0.502	2537.	1552.	4.59	927.	45.4	5.07	91.1	101.4
153.	4000.	0.510	2041.	1440.	3.98	857.	40.9	5.22	89.2	94.3
154.	2999.	0.531	1593.	1318.	3.34	778.	35.9	5.43	86.9	86.5
155.	1000.	0.738	737.	1013.	1.93	566.	23.4	6.17	80.1	63.0

ALT = 35000 MO=0.5

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
156.	5252.	0.558	2933.	1625.	4.87	948.	50.0	4.93	92.1	105.6
157.	5000.	0.546	2728.	1585.	4.64	937.	48.3	5.07	91.3	102.8
158.	4000.	0.555	2219.	1471.	4.03	873.	43.6	5.27	89.4	95.6
159.	2999.	0.581	1741.	1350.	3.40	799.	38.4	5.51	87.2	88.3
160.	1000.	0.818	818.	1041.	1.99	605.	25.4	6.44	80.6	66.1

ALT = 35000 MO=0.6

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
161.	5089.	0.592	3014.	1625.	4.69	943.	51.8	5.06	91.6	104.4
162.	4000.	0.598	2391.	1495.	4.02	879.	46.3	5.31	89.4	96.1
163.	3000.	0.629	1888.	1376.	3.41	811.	41.0	5.59	87.3	89.4
164.	2000.	0.696	1392.	1238.	2.75	733.	34.9	5.99	84.7	80.6
165.	1000.	0.902	902.	1069.	2.02	635.	27.5	6.67	80.9	68.6

ALT = 35000 MO=0.7

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
166.	4986.	0.627	3127.	1625.	4.51	936.	54.2	5.18	91.0	102.7
167.	4000.	0.639	2557.	1513.	3.95	878.	49.3	5.38	89.2	96.1
168.	3001.	0.676	2029.	1397.	3.37	814.	43.7	5.66	87.2	89.7
169.	2001.	0.753	1507.	1261.	2.73	743.	37.3	6.12	84.7	81.5
170.	1000.	0.987	988.	1093.	2.03	656.	29.8	6.88	81.0	70.4

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 35000 MO=0.4

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
151.	3.86	406.5	24.2	769.	1.89	494.2	1.35	1184.	7236.	1664.
152.	3.86	406.5	22.7	748.	1.84	483.5	1.30	1143.	6891.	1439.
153.	3.86	406.5	20.3	716.	1.71	471.6	1.24	1077.	5949.	1131.
154.	3.86	406.5	17.6	680.	1.57	458.7	1.17	1010.	4953.	839.
155.	3.86	406.5	10.9	578.	1.29	428.6	1.07	856.	2708.	325.

ALT = 35000 MO=0.5

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
156.	4.10	413.6	25.2	776.	2.01	500.3	1.38	1182.	7970.	1763.
157.	4.10	413.6	24.4	765.	1.98	494.3	1.35	1158.	7799.	1629.
158.	4.10	413.6	21.8	731.	1.83	481.6	1.27	1091.	6841.	1286.
159.	4.10	413.6	19.0	695.	1.69	468.5	1.20	1023.	5813.	965.
160.	4.10	413.6	12.0	595.	1.38	437.6	1.08	864.	3471.	390.

ALT = 35000 MO=0.6

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
161.	4.41	422.3	26.4	783.	2.14	507.4	1.40	1177.	8907.	1878.
162.	4.41	422.3	23.4	745.	1.98	492.6	1.31	1100.	7852.	1454.
163.	4.41	422.3	20.5	710.	1.83	479.5	1.23	1032.	6796.	1103.
164.	4.41	422.3	17.1	667.	1.67	464.7	1.16	958.	5651.	772.
165.	4.41	422.3	13.1	611.	1.50	448.2	1.10	872.	4371.	465.

ALT = 35000 MO=0.7

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
166.	4.80	432.6	27.9	792.	2.31	516.8	1.44	1173.	10040.	2031.
167.	4.80	432.6	25.1	759.	2.16	504.6	1.35	1105.	9017.	1633.
168.	4.80	432.6	22.1	724.	1.99	491.6	1.27	1038.	7910.	1253.
169.	4.80	432.6	18.5	682.	1.82	476.8	1.19	964.	6739.	890.
170.	4.80	432.6	14.3	627.	1.63	460.2	1.12	878.	5420.	550.

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 35000 MO=0.82

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
171.	4900.	0.673	3297.	1628.	4.28	923.	57.7	5.31	90.3	100.8
172.	4000.	0.690	2758.	1531.	3.81	872.	53.0	5.48	88.8	95.5
173.	3000.	0.732	2196.	1416.	3.26	811.	47.1	5.78	86.9	89.4
174.	2000.	0.820	1640.	1282.	2.66	745.	40.5	6.26	84.4	81.6
175.	1000.	1.089	1089.	1118.	2.01	670.	32.6	7.09	80.9	71.7

ALT = 35000 MO=0.9

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
176.	4856.	0.706	3428.	1632.	4.12	911.	60.3	5.41	89.8	99.4
177.	3999.	0.725	2900.	1541.	3.70	865.	55.8	5.57	88.4	94.8
178.	2999.	0.770	2308.	1426.	3.17	807.	49.7	5.88	86.6	88.9
179.	2001.	0.863	1727.	1294.	2.59	743.	42.7	6.37	84.1	81.4
180.	1000.	1.150	1150.	1130.	1.96	671.	34.6	7.22	80.7	71.8

ALT = 35000 MO=0.95

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
181.	4805.	0.729	3502.	1633.	4.00	902.	61.9	5.47	89.4	98.4
182.	3999.	0.748	2992.	1548.	3.62	859.	57.5	5.63	88.2	94.3
183.	3000.	0.793	2380.	1431.	3.10	803.	51.3	5.95	86.3	88.5
184.	2000.	0.892	1783.	1301.	2.54	741.	44.2	6.45	83.9	81.2
185.	1000.	1.188	1188.	1137.	1.93	671.	35.8	7.32	80.5	71.8

ALT = 40000 MO=0.422

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
186.	4278.	0.532	2275.	1623.	5.00	950.	38.4	4.87	92.5	106.7
187.	3999.	0.515	2061.	1567.	4.67	934.	36.5	5.07	91.4	102.4
188.	3000.	0.528	1584.	1422.	3.89	847.	31.9	5.29	88.8	93.3
189.	2000.	0.567	1135.	1262.	3.06	743.	26.7	5.60	85.9	82.8
190.	1000.	0.700	700.	1066.	2.15	610.	20.3	6.11	81.5	67.9

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 35000 MO=0.82

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
171.	5.38	447.0	30.0	804.	2.55	530.5	1.50	1168.	11665.	2263.
172.	5.38	447.0	27.4	776.	2.40	520.2	1.41	1108.	10656.	1873.
173.	5.38	447.0	24.1	741.	2.23	507.4	1.31	1042.	9485.	1450.
174.	5.38	447.0	20.3	699.	2.04	493.0	1.23	968.	8241.	1046.
175.	5.38	447.0	15.9	647.	1.84	476.5	1.15	882.	6882.	667.

ALT = 35000 MO=0.9

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
176.	5.85	457.9	31.7	813.	2.74	541.0	1.54	1168.	12926.	2444.
177.	5.85	457.9	29.1	788.	2.59	531.5	1.45	1111.	11924.	2053.
178.	5.85	457.9	25.6	753.	2.41	518.9	1.35	1043.	10707.	1599.
179.	5.85	457.9	21.6	711.	2.22	504.6	1.25	969.	9412.	1161.
180.	5.85	457.9	17.0	659.	2.00	488.3	1.17	883.	7985.	752.

ALT = 35000 MO=0.95

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
181.	6.18	465.2	32.7	818.	2.87	547.7	1.57	1166.	13762.	2558.
182.	6.18	465.2	30.2	795.	2.72	539.0	1.48	1113.	12798.	2172.
183.	6.18	465.2	26.6	760.	2.54	526.4	1.37	1043.	11558.	1698.
184.	6.18	465.2	22.5	718.	2.34	512.3	1.27	970.	10222.	1239.
185.	6.18	465.2	17.7	667.	2.12	496.1	1.18	884.	8754.	808.

ALT = 40000 MO=0.422

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
186.	3.07	403.9	19.2	764.	1.92	490.9	1.36	1184.	5812.	1328.
187.	3.07	403.9	18.3	749.	1.88	482.2	1.32	1151.	5627.	1186.
188.	3.07	403.9	15.8	707.	1.71	466.7	1.23	1067.	4682.	869.
189.	3.07	403.9	13.0	658.	1.53	449.9	1.15	979.	3658.	578.
190.	3.07	403.9	9.6	594.	1.35	430.7	1.08	880.	2519.	317.

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 40000 MO=0.5

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
191.	4151.	0.558	2318.	1624.	4.88	949.	39.3	4.96	92.1	106.0
192.	4000.	0.550	2201.	1594.	4.71	940.	38.3	5.07	91.5	103.6
193.	3000.	0.563	1690.	1446.	3.92	859.	33.5	5.33	89.0	94.3
194.	2000.	0.608	1216.	1285.	3.10	761.	28.1	5.69	86.1	84.2
195.	1000.	0.756	755.	1089.	2.19	637.	21.6	6.29	81.8	70.0

ALT = 40000 MO=0.6

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
196.	4018.	0.593	2383.	1623.	4.71	943.	40.8	5.08	91.6	104.4
197.	3500.	0.592	2072.	1541.	4.28	906.	38.0	5.27	90.2	98.9
198.	3000.	0.607	1822.	1470.	3.92	866.	35.7	5.37	89.0	94.9
199.	2000.	0.660	1320.	1311.	3.11	776.	30.1	5.79	86.2	85.5
200.	1000.	0.828	828.	1116.	2.23	663.	23.3	6.50	82.0	72.1

ALT = 40000 MO=0.7

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
201.	3941.	0.627	2472.	1624.	4.53	936.	42.7	5.20	91.1	102.8
202.	3499.	0.632	2212.	1558.	4.20	905.	40.4	5.33	90.0	98.7
203.	3000.	0.650	1949.	1488.	3.85	866.	38.0	5.44	88.8	94.9
204.	2001.	0.711	1422.	1332.	3.08	782.	32.2	5.87	86.1	86.1
205.	1000.	0.901	902.	1139.	2.23	682.	25.1	6.67	82.1	73.7

ALT = 40000 MO=0.82

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
206.	3873.	0.672	2602.	1625.	4.30	923.	45.4	5.33	90.3	100.8
207.	3500.	0.680	2381.	1573.	4.05	897.	43.5	5.42	89.5	97.9
208.	3000.	0.701	2102.	1506.	3.72	860.	40.9	5.55	88.4	94.3
209.	2000.	0.770	1540.	1351.	2.99	781.	34.8	6.00	85.8	86.0
210.	1000.	0.989	989.	1162.	2.19	691.	27.4	6.84	82.0	74.6

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 40000 MO=0.5

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
191.	3.23	409.5	19.8	771.	2.00	495.4	1.38	1181.	6292.	1387.
192.	3.23	409.5	19.3	762.	1.99	490.9	1.35	1164.	6189.	1308.
193.	3.23	409.5	16.7	719.	1.81	474.6	1.26	1076.	5233.	962.
194.	3.23	409.5	13.8	670.	1.62	457.5	1.17	988.	4182.	647.
195.	3.23	409.5	10.3	606.	1.43	437.9	1.10	888.	3006.	362.

ALT = 40000 MO=0.6

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
196.	3.47	418.2	20.8	778.	2.14	502.7	1.41	1176.	7018.	1480.
197.	3.47	418.2	19.3	753.	2.05	493.0	1.34	1128.	6543.	1262.
198.	3.47	418.2	18.0	733.	1.95	485.6	1.30	1085.	6021.	1090.
199.	3.47	418.2	14.9	685.	1.75	468.2	1.20	996.	4944.	744.
200.	3.47	418.2	11.2	622.	1.54	448.4	1.12	895.	3726.	426.

ALT = 40000 MO=0.7

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
201.	3.77	428.3	22.0	786.	2.31	512.0	1.44	1172.	7914.	1602.
202.	3.77	428.3	20.7	767.	2.23	504.7	1.39	1132.	7474.	1415.
203.	3.77	428.3	19.3	747.	2.13	497.4	1.34	1090.	6928.	1228.
204.	3.77	428.3	16.1	700.	1.91	480.3	1.23	1002.	5808.	851.
205.	3.77	428.3	12.2	638.	1.69	460.2	1.14	900.	4558.	500.

ALT = 40000 MO=0.82

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
206.	4.23	442.6	23.6	798.	2.55	525.5	1.50	1167.	9192.	1784.
207.	4.23	442.6	22.6	783.	2.48	520.1	1.45	1135.	8785.	1618.
208.	4.23	442.6	21.1	764.	2.37	512.9	1.39	1094.	8208.	1408.
209.	4.23	442.6	17.6	716.	2.14	496.0	1.27	1005.	7019.	990.
210.	4.23	442.6	13.5	656.	1.90	476.3	1.17	904.	5714.	601.

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 40000 MO=0.9

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
211.	3837.	0.704	2702.	1626.	4.14	912.	47.6	5.42	89.8	99.5
212.	3000.	0.735	2206.	1515.	3.61	853.	43.0	5.65	88.1	93.7
213.	2500.	0.765	1912.	1442.	3.27	817.	40.0	5.84	86.9	90.0
214.	2000.	0.810	1620.	1363.	2.91	777.	36.6	6.11	85.5	85.6
215.	1000.	1.041	1042.	1173.	2.14	691.	29.0	6.98	81.7	74.7

ALT = 40000 MO=0.95

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
216.	3803.	0.726	2759.	1625.	4.02	903.	49.0	5.47	89.5	98.5
217.	3000.	0.758	2273.	1521.	3.53	848.	44.4	5.71	87.8	93.2
218.	2500.	0.788	1970.	1447.	3.20	813.	41.3	5.91	86.7	89.6
219.	2001.	0.836	1673.	1370.	2.85	775.	37.9	6.18	85.3	85.3
220.	1000.	1.075	1075.	1180.	2.10	690.	30.0	7.07	81.5	74.6

ALT = 45000 MO=0.475

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
221.	3235.	0.552	1784.	1622.	4.82	945.	30.0	5.04	91.9	104.9
222.	3000.	0.545	1635.	1570.	4.54	924.	28.7	5.18	90.9	101.0
223.	2500.	0.556	1391.	1479.	4.05	871.	26.4	5.32	89.3	95.5
224.	2000.	0.577	1153.	1381.	3.54	811.	23.9	5.50	87.6	89.7
225.	1000.	0.692	692.	1151.	2.44	666.	18.0	6.09	83.1	73.9

ALT = 45000 MO=0.6

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
226.	3104.	0.597	1853.	1622.	4.63	938.	31.5	5.17	91.3	103.1
227.	2500.	0.610	1525.	1509.	4.04	879.	28.5	5.37	89.4	96.2
228.	2000.	0.637	1273.	1413.	3.56	826.	26.0	5.58	87.8	91.0
229.	1500.	0.680	1021.	1305.	3.03	766.	23.0	5.88	85.8	84.4
230.	500.	1.053	526.	1035.	1.87	612.	15.9	6.96	79.8	65.6

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 40000 MO=0.9

CASE	P2	T2	PE	TE	P28/PO	T28	P8/PO	T8	FGD	FGM
211.	4.60	453.4	24.9	807.	2.74	535.8	1.54	1164.	10182.	1929.
212.	4.60	453.4	22.4	775.	2.56	524.1	1.43	1095.	9201.	1543.
213.	4.60	453.4	20.6	753.	2.44	516.0	1.36	1053.	8593.	1316.
214.	4.60	453.4	18.7	727.	2.32	507.5	1.30	1007.	7962.	1094.
215.	4.60	453.4	14.4	668.	2.06	488.0	1.19	905.	6596.	673.

ALT = 40000 MO=0.95

CASE	P2	T2	PE	TE	P28/PO	T28	P8/PO	T8	FGD	FGM
216.	4.86	460.6	25.8	812.	2.87	542.6	1.57	1161.	10847.	2022.
217.	4.86	460.6	23.2	782.	2.69	531.4	1.46	1096.	9886.	1635.
218.	4.86	460.6	21.4	760.	2.57	523.5	1.39	1052.	9266.	1398.
219.	4.86	460.6	19.5	735.	2.45	515.0	1.32	1008.	8615.	1166.
220.	4.86	460.6	15.0	675.	2.18	495.7	1.20	905.	7210.	722.

ALT = 45000 MO=0.475

CASE	P2	T2	PE	TE	P28/PO	T28	P8/PO	T8	FGD	FGM
221.	2.50	407.6	15.2	766.	1.97	491.1	1.36	1185.	4787.	1037.
222.	2.50	407.6	14.5	750.	1.92	484.4	1.32	1155.	4595.	937.
223.	2.50	407.6	13.3	724.	1.81	474.7	1.26	1101.	4112.	774.
224.	2.50	407.6	11.9	696.	1.69	464.4	1.21	1045.	3606.	617.
225.	2.50	407.6	8.7	623.	1.45	441.1	1.11	923.	2498.	328.

ALT = 45000 MO=0.6

CASE	P2	T2	PE	TE	P28/PO	T28	P8/PO	T8	FGD	FGM
226.	2.73	418.2	16.1	775.	2.13	500.6	1.39	1180.	5480.	1129.
227.	2.73	418.2	14.5	742.	1.99	488.2	1.31	1112.	4882.	902.
228.	2.73	418.2	13.1	715.	1.86	477.9	1.25	1057.	4356.	728.
229.	2.73	418.2	11.5	681.	1.73	466.5	1.19	996.	3803.	558.
230.	2.73	418.2	7.5	595.	1.46	440.3	1.09	858.	2534.	251.

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 45000 MO=0.7

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
231.	3031.	0.635	1924.	1623.	4.45	930.	32.9	5.27	90.8	101.7
232.	2500.	0.652	1629.	1526.	3.98	879.	30.3	5.44	89.2	96.2
233.	2000.	0.683	1365.	1433.	3.51	827.	27.6	5.65	87.6	91.1
234.	1500.	0.734	1101.	1327.	3.01	773.	24.7	5.97	85.8	85.1
235.	500.	1.152	576.	1059.	1.88	635.	17.3	7.18	80.0	67.7

ALT = 45000 MO=0.82

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
236.	2968.	0.681	2022.	1624.	4.23	915.	35.1	5.40	90.1	99.9
237.	2500.	0.702	1754.	1542.	3.84	872.	32.7	5.54	88.8	95.6
238.	2000.	0.737	1473.	1451.	3.39	824.	29.8	5.77	87.3	90.8
239.	1500.	0.794	1191.	1346.	2.92	772.	26.6	6.10	85.5	85.0
240.	500.	1.272	636.	1084.	1.87	651.	19.0	7.42	80.0	69.3

ALT = 45000 MO=0.9

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
241.	2935.	0.715	2097.	1625.	4.07	904.	36.7	5.48	89.6	98.6
242.	2500.	0.736	1841.	1551.	3.72	865.	34.4	5.62	88.4	94.9
243.	2000.	0.773	1546.	1460.	3.29	819.	31.4	5.86	87.0	90.3
244.	1500.	0.835	1253.	1357.	2.84	769.	28.1	6.21	85.1	84.6
245.	500.	1.344	672.	1096.	1.83	654.	20.1	7.55	79.8	69.6

ALT = 45000 MO=0.95

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
246.	2912.	0.736	2144.	1624.	3.96	895.	37.8	5.53	89.3	97.8
247.	2500.	0.758	1896.	1557.	3.64	860.	35.5	5.68	88.2	94.4
248.	2000.	0.796	1592.	1465.	3.23	815.	32.5	5.93	86.7	89.9
249.	1500.	0.862	1293.	1364.	2.78	766.	29.0	6.29	84.9	84.3
250.	500.	1.387	693.	1102.	1.80	654.	20.9	7.65	79.6	69.6

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NC AIR BLEED OR POWER EXTRACTION

ALT = 45000 MO=0.7

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
231.	2.97	428.3	17.0	783.	2.30	510.3	1.43	1176.	6161.	1223.
232.	2.97	428.3	15.5	755.	2.16	500.0	1.35	1117.	5602.	1014.
233.	2.97	428.3	14.0	728.	2.03	489.9	1.29	1063.	5050.	824.
234.	2.97	428.3	12.4	696.	1.89	478.5	1.22	1002.	4480.	640.
235.	2.97	428.3	8.3	611.	1.60	452.2	1.11	864.	3176.	300.

ALT = 45000 MO=0.82

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
236.	3.33	442.6	18.3	794.	2.53	524.0	1.48	1170.	7144.	1363.
237.	3.33	442.6	17.0	772.	2.41	515.5	1.41	1119.	6615.	1163.
238.	3.33	442.6	15.3	744.	2.27	505.4	1.33	1066.	6032.	952.
239.	3.33	442.6	13.5	712.	2.12	494.3	1.26	1006.	5427.	746.
240.	3.33	442.6	9.2	631.	1.80	468.4	1.13	868.	4074.	367.

ALT = 45000 MO=0.9

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
241.	3.62	453.4	19.3	804.	2.72	534.3	1.53	1166.	7910.	1473.
242.	3.62	453.4	18.0	783.	2.60	526.7	1.45	1120.	7399.	1275.
243.	3.62	453.4	16.3	755.	2.45	516.7	1.37	1066.	6795.	1047.
244.	3.62	453.4	14.4	723.	2.30	505.7	1.29	1008.	6163.	825.
245.	3.62	453.4	9.9	644.	1.96	480.1	1.15	868.	4750.	415.

ALT = 45000 MO=0.95

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
246.	3.82	460.6	20.0	810.	2.85	541.2	1.56	1163.	8434.	1548.
247.	3.82	460.6	18.7	790.	2.73	534.0	1.48	1121.	7939.	1350.
248.	3.82	460.6	16.9	762.	2.58	524.1	1.39	1066.	7326.	1111.
249.	3.82	460.6	14.9	730.	2.42	513.3	1.31	1008.	6673.	879.
250.	3.82	460.6	10.3	652.	2.07	487.9	1.16	868.	5218.	448.

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NC AIR BLEED OR POWER EXTRACTION

ALT = 50000 MO=0.536

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
251.	2434.	0.580	1412.	1622.	4.63	935.	23.5	5.20	91.2	102.6
252.	2000.	0.592	1183.	1518.	4.10	880.	21.5	5.38	89.5	96.3
253.	1500.	0.623	935.	1393.	3.46	808.	19.0	5.64	87.3	89.3
254.	1000.	0.692	692.	1249.	2.77	723.	16.1	6.01	84.7	80.0
255.	500.	0.905	452.	1072.	2.02	618.	12.6	6.65	80.7	67.3

ALT = 50000 MO=0.6

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
256.	2381.	0.606	1442.	1622.	4.53	931.	24.2	5.26	90.9	101.9
257.	2000.	0.619	1238.	1532.	4.08	882.	22.4	5.41	89.4	96.5
258.	1500.	0.655	982.	1409.	3.46	814.	19.8	5.68	87.4	89.8
259.	1000.	0.729	729.	1265.	2.78	735.	16.8	6.10	84.7	80.9
260.	500.	0.959	480.	1089.	2.04	636.	13.3	6.80	80.9	68.8

ALT = 50000 MO=0.7

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
261.	2314.	0.645	1493.	1622.	4.36	920.	25.3	5.35	90.4	100.5
262.	2000.	0.660	1321.	1549.	4.01	882.	23.8	5.47	89.3	96.5
263.	1500.	0.702	1053.	1428.	3.41	816.	21.1	5.75	87.2	90.0
264.	1000.	0.787	787.	1287.	2.76	745.	18.0	6.22	84.7	81.8
265.	500.	1.045	523.	1113.	2.04	657.	14.3	7.00	81.0	70.5

ALT = 50000 MO=0.82

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
266.	2262.	0.694	1571.	1623.	4.14	906.	27.0	5.47	89.8	98.9
267.	2000.	0.710	1421.	1564.	3.87	875.	25.7	5.57	88.9	95.8
268.	1500.	0.757	1136.	1445.	3.30	813.	22.8	5.87	86.9	89.7
269.	1000.	0.854	854.	1307.	2.69	746.	19.6	6.35	84.4	81.9
270.	500.	1.147	574.	1136.	2.02	669.	15.7	7.21	80.9	71.8

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 50000 MO=0.536

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
251.	2.05	412.5	12.0	767.	2.03	493.2	1.36	1188.	3972.	818.
252.	2.05	412.5	10.9	737.	1.90	482.0	1.29	1125.	3551.	665.
253.	2.05	412.5	9.5	701.	1.75	468.7	1.22	1053.	3035.	500.
254.	2.05	412.5	7.9	656.	1.59	454.0	1.15	975.	2476.	346.
255.	2.05	412.5	6.0	599.	1.42	437.3	1.09	885.	1854.	203.

ALT = 50000 MO=0.6

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
256.	2.15	418.2	12.4	771.	2.12	498.6	1.38	1185.	4257.	857.
257.	2.15	418.2	11.4	745.	2.00	489.0	1.31	1131.	3874.	718.
258.	2.15	418.2	10.0	710.	1.84	475.8	1.24	1058.	3347.	545.
259.	2.15	418.2	8.3	665.	1.67	460.9	1.16	980.	2778.	379.
260.	2.15	418.2	6.4	609.	1.50	444.1	1.10	889.	2141.	227.

ALT = 50000 MO=0.7

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
261.	2.33	428.3	13.1	779.	2.28	508.3	1.41	1179.	4776.	927.
262.	2.33	428.3	12.3	759.	2.17	500.8	1.36	1135.	4442.	806.
263.	2.33	428.3	10.8	724.	2.01	487.8	1.27	1064.	3888.	618.
264.	2.33	428.3	9.0	680.	1.83	472.9	1.19	986.	3306.	437.
265.	2.33	428.3	7.0	625.	1.64	456.0	1.12	895.	2650.	268.

ALT = 50000 MO=0.82

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
266.	2.62	442.6	14.1	791.	2.51	522.2	1.47	1173.	5537.	1035.
267.	2.62	442.6	13.4	775.	2.42	516.2	1.41	1136.	5238.	925.
268.	2.62	442.6	11.8	740.	2.24	503.4	1.32	1066.	4655.	715.
269.	2.62	442.6	9.9	697.	2.05	488.8	1.23	988.	4037.	513.
270.	2.62	442.6	7.7	643.	1.84	472.1	1.15	898.	3360.	325.

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NO AIR BLEED OR POWER EXTRACTION

ALT = 50000 MO=0.9

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
271.	2236.	0.728	1628.	1623.	3.99	894.	28.3	5.55	89.3	97.7
272.	2000.	0.745	1490.	1572.	3.75	868.	27.0	5.65	88.5	95.2
273.	1500.	0.795	1192.	1454.	3.21	809.	24.0	5.96	86.6	89.2
274.	1000.	0.898	898.	1317.	2.62	744.	20.6	6.47	84.1	81.6
275.	500.	1.209	604.	1147.	1.97	670.	16.6	7.34	80.6	71.9

ALT = 50000 MO=0.95

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
276.	2215.	0.751	1663.	1622.	3.89	886.	29.1	5.61	89.0	96.9
277.	2000.	0.767	1534.	1577.	3.67	862.	27.9	5.71	88.3	94.6
278.	1500.	0.819	1228.	1458.	3.14	805.	24.9	6.03	86.4	88.8
279.	1000.	0.926	926.	1323.	2.57	742.	21.3	6.55	83.9	81.4
280.	500.	1.247	624.	1153.	1.94	670.	17.3	7.44	80.5	71.9

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
1.0 RAM RECOVERY, NC AIR BLEED OR POWER EXTRACTION

ALT = 50000 MO=0.9

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
271.	2.85	453.4	14.9	801.	2.69	532.7	1.51	1168.	6135.	1121.
272.	2.85	453.4	14.2	786.	2.61	527.4	1.46	1137.	5855.	1014.
273.	2.85	453.4	12.5	751.	2.42	514.7	1.35	1066.	5251.	787.
274.	2.85	453.4	10.5	708.	2.22	500.3	1.26	989.	4605.	569.
275.	2.85	453.4	8.3	656.	2.01	483.8	1.17	898.	3896.	365.

ALT = 50000 MO=0.95

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
276.	3.01	460.6	15.4	806.	2.82	539.5	1.54	1165.	6540.	1176.
277.	3.01	460.6	14.8	794.	2.74	534.8	1.49	1137.	6281.	1073.
278.	3.01	460.6	13.0	758.	2.55	522.1	1.38	1066.	5663.	837.
279.	3.01	460.6	10.9	715.	2.35	507.8	1.27	989.	5000.	607.
280.	3.01	460.6	8.6	664.	2.12	491.5	1.18	898.	4270.	393.

FAN C

INSTALLATION EFFECTS

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NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, ICEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = SEA LEVEL MO = 0

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
1.	22000.	0.368	8090.	1651.	3.70	804.	140.9	4.70	90.0	90.4
2.	20852.	0.380	7928.	1651.	3.70	796.	138.1	4.65	90.0	90.1
3.	21802.	0.369	8056.	1652.	3.67	801.	141.0	4.68	90.0	90.1
4.	22051.	0.369	8133.	1655.	3.71	804.	140.9	4.71	90.0	90.5
5.	20690.	0.383	7933.	1656.	3.68	794.	138.2	4.63	90.0	89.9

ALT = SEA LEVEL MO = 0.25

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
6.	16225.	0.483	7845.	1642.	3.56	801.	142.0	4.85	89.4	89.3
7.	15264.	0.504	7690.	1642.	3.56	794.	139.2	4.80	89.4	89.0
8.	16052.	0.487	7818.	1643.	3.53	798.	142.1	4.83	89.4	89.0
9.	16271.	0.485	7886.	1646.	3.56	801.	142.0	4.86	89.4	89.4
10.	15139.	0.509	7705.	1648.	3.54	792.	139.2	4.79	89.4	88.8

ALT = SEA LEVEL MO = 0.4

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
11.	13559.	0.569	7709.	1627.	3.35	793.	143.4	5.08	88.6	87.5
12.	12683.	0.596	7560.	1627.	3.35	788.	140.6	5.03	88.6	87.3
13.	13396.	0.573	7683.	1628.	3.32	791.	143.5	5.06	88.6	87.3
14.	13599.	0.570	7749.	1631.	3.35	794.	143.4	5.08	88.6	87.6
15.	12562.	0.603	7575.	1633.	3.33	786.	140.7	5.02	88.6	87.1

ALT = 10000 MO = 0

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
16.	18068.	0.363	6550.	1644.	4.27	875.	112.0	4.57	92.0	96.8
17.	17246.	0.372	6424.	1644.	4.28	869.	109.8	4.53	92.0	96.6
18.	17873.	0.365	6519.	1645.	4.23	871.	112.1	4.54	92.0	96.4
19.	18120.	0.364	6591.	1649.	4.28	875.	112.0	4.57	92.0	96.9
20.	17095.	0.376	6432.	1650.	4.24	866.	109.9	4.51	92.0	96.3

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = SEA LEVEL MO = 0

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
1.	14.70	518.7	71.2	926.	1.45	591.6	1.27	1298.	17489.	4511.
2.	14.40	518.7	69.8	926.	1.42	591.7	1.26	1301.	16506.	4347.
3.	14.70	518.7	70.6	924.	1.45	591.0	1.27	1300.	17351.	4451.
4.	14.70	518.7	71.3	926.	1.45	591.8	1.27	1301.	17529.	4522.
5.	14.40	518.7	69.3	924.	1.42	591.2	1.26	1306.	16393.	4297.

ALT = SEA LEVEL MO = 0.25

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
6.	15.35	525.2	72.0	927.	1.49	595.8	1.28	1290.	18875.	4564.
7.	15.04	525.2	70.6	927.	1.46	595.8	1.26	1293.	17875.	4399.
8.	15.35	525.2	71.4	925.	1.49	595.2	1.27	1293.	18740.	4506.
9.	15.35	525.2	72.1	927.	1.49	595.9	1.28	1293.	18916.	4576.
10.	15.04	525.2	70.1	925.	1.46	595.4	1.26	1299.	17783.	4353.

ALT = SEA LEVEL MO = 0.4

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
11.	16.41	535.3	73.1	929.	1.56	602.5	1.28	1278.	21030.	4634.
12.	16.08	535.3	71.7	929.	1.53	602.4	1.27	1281.	19998.	4469.
13.	16.41	535.3	72.5	927.	1.55	602.0	1.28	1280.	20894.	4576.
14.	16.41	535.3	73.2	929.	1.56	602.7	1.28	1281.	21068.	4645.
15.	16.08	535.3	71.2	928.	1.52	602.1	1.27	1287.	19900.	4423.

ALT = 10000 MO = 0

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
16.	10.11	483.0	55.2	898.	1.54	562.3	1.35	1269.	14110.	3959.
17.	9.90	483.0	54.1	898.	1.51	562.4	1.34	1272.	13423.	3823.
18.	10.11	483.0	54.5	896.	1.54	561.6	1.35	1271.	13977.	3897.
19.	10.11	483.0	55.3	899.	1.54	562.5	1.35	1273.	14150.	3970.
20.	9.90	483.0	53.5	896.	1.51	561.8	1.33	1278.	13323.	3772.

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = 10000 MO = 0.25

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
21.	13646.	0.465	6344.	1634.	4.10	866.	112.7	4.68	91.4	95.5
22.	12936.	0.481	6219.	1634.	4.10	861.	110.5	4.65	91.4	95.2
23.	13471.	0.469	6314.	1635.	4.06	863.	112.8	4.66	91.4	95.1
24.	13690.	0.466	6384.	1639.	4.11	867.	112.7	4.69	91.4	95.6
25.	12804.	0.487	6229.	1640.	4.07	859.	110.5	4.63	91.4	94.9

ALT = 10000 MO = 0.6

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
26.	9295.	0.652	6064.	1585.	3.40	822.	116.0	5.22	88.8	89.8
27.	8695.	0.684	5946.	1586.	3.40	820.	113.7	5.21	88.8	89.6
28.	9148.	0.660	6037.	1587.	3.37	820.	116.1	5.21	88.8	89.5
29.	9329.	0.654	6100.	1590.	3.40	823.	116.0	5.23	88.8	89.8
30.	8588.	0.694	5957.	1593.	3.37	819.	113.7	5.19	88.8	89.4

ALT = 20000 MO = 0.4

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
31.	8260.	0.514	4243.	1534.	4.04	871.	81.7	4.80	91.2	95.4
32.	7810.	0.533	4162.	1535.	4.04	868.	80.0	4.78	91.2	95.2
33.	8099.	0.520	4215.	1536.	3.99	867.	81.8	4.77	91.2	95.0
34.	8302.	0.516	4281.	1541.	4.05	872.	81.6	4.81	91.2	95.6
35.	7694.	0.542	4172.	1544.	4.00	865.	80.1	4.75	91.2	94.9

ALT = 20000 MO = 0.6

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
36.	7185.	0.615	4416.	1534.	3.73	855.	86.3	5.04	90.1	93.3
37.	6763.	0.641	4332.	1535.	3.73	853.	84.5	5.03	90.1	93.2
38.	7038.	0.624	4389.	1536.	3.68	852.	86.3	5.02	90.1	92.9
39.	7226.	0.617	4455.	1541.	3.74	856.	86.3	5.05	90.1	93.4
40.	6654.	0.652	4341.	1544.	3.69	852.	84.6	5.01	90.1	92.9

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = 10000 MO = 0.25

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
21.	10.56	489.1	55.7	899.	1.58	566.2	1.36	1261.	15022.	3990.
22.	10.35	489.1	54.6	899.	1.55	566.1	1.34	1264.	14311.	3853.
23.	10.56	489.1	55.1	897.	1.58	565.4	1.35	1263.	14891.	3928.
24.	10.56	489.1	55.8	900.	1.59	566.4	1.36	1265.	15059.	4002.
25.	10.35	489.1	54.1	897.	1.55	565.5	1.34	1270.	14215.	3803.

ALT = 10000 MO = 0.6

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
26.	12.89	517.9	58.3	905.	1.80	585.6	1.38	1223.	19670.	4140.
27.	12.64	517.9	57.2	905.	1.76	585.4	1.36	1226.	18881.	3999.
28.	12.89	517.9	57.7	903.	1.80	585.0	1.37	1226.	19548.	4079.
29.	12.89	517.9	58.4	905.	1.80	585.8	1.38	1226.	19702.	4151.
30.	12.64	517.9	56.6	903.	1.76	584.9	1.36	1233.	18799.	3950.

ALT = 20000 MO = 0.4

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
31.	7.54	461.7	39.2	848.	1.68	533.5	1.39	1175.	11477.	2895.
32.	7.39	461.7	38.5	848.	1.65	533.3	1.38	1178.	10977.	2798.
33.	7.54	461.7	38.6	844.	1.67	532.6	1.38	1178.	11350.	2835.
34.	7.54	461.7	39.3	848.	1.68	533.8	1.39	1180.	11516.	2908.
35.	7.39	461.7	37.9	845.	1.64	532.7	1.37	1187.	10891.	2750.

ALT = 20000 MO = 0.6

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
36.	8.62	479.7	42.0	861.	1.87	549.4	1.44	1169.	14067.	3203.
37.	8.44	479.7	41.2	861.	1.83	549.1	1.42	1172.	13535.	3094.
38.	8.62	479.7	41.4	859.	1.86	548.5	1.43	1173.	13953.	3139.
39.	8.62	479.7	42.2	862.	1.87	549.7	1.44	1175.	14105.	3217.
40.	8.44	479.7	40.7	859.	1.82	548.5	1.42	1181.	13456.	3043.

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = 20000 MO = 0.7

CASE	FN	SFC	WFM	TC	EPR	w2*	w2C	BPR	PCN*	PCNF*
41.	6804.	0.666	4533.	1534.	3.55	843.	89.4	5.18	89.4	92.0
42.	6392.	0.696	4447.	1535.	3.55	842.	87.6	5.17	89.4	91.9
43.	6660.	0.677	4507.	1536.	3.51	840.	89.4	5.15	89.4	91.6
44.	6843.	0.668	4572.	1541.	3.56	844.	89.4	5.18	89.4	92.1
45.	6285.	0.709	4458.	1544.	3.52	840.	87.6	5.15	89.4	91.6

ALT = 30000 MO = 0.4

CASE	FN	SFC	WFM	TC	EPR	w2*	w2C	BPR	PCN*	PCNF*
46.	6615.	0.494	3269.	1527.	4.72	936.	61.6	4.57	93.6	104.2
47.	6308.	0.509	3209.	1528.	4.73	935.	60.4	4.56	93.6	104.0
48.	6471.	0.501	3242.	1529.	4.64	933.	61.7	4.53	93.6	103.3
49.	6656.	0.497	3311.	1537.	4.74	938.	61.6	4.58	93.6	104.5
50.	6203.	0.520	3223.	1541.	4.66	932.	60.5	4.53	93.6	103.4

ALT = 30000 MO = 0.6

CASE	FN	SFC	WFM	TC	EPR	w2*	w2C	BPR	PCN*	PCNF*
51.	5950.	0.576	3430.	1527.	4.39	918.	65.6	4.75	92.4	100.5
52.	5654.	0.595	3366.	1528.	4.39	917.	64.2	4.74	92.4	100.3
53.	5805.	0.586	3403.	1529.	4.32	914.	65.7	4.72	92.4	99.8
54.	5988.	0.579	3469.	1536.	4.40	919.	65.6	4.76	92.4	100.8
55.	5543.	0.610	3379.	1540.	4.34	914.	64.3	4.72	92.4	99.8

ALT = 30000 MO = 0.82

CASE	FN	SFC	WFM	TC	EPR	w2*	w2C	BPR	PCN*	PCNF*
56.	5436.	0.674	3664.	1528.	3.92	884.	71.5	5.02	90.8	96.5
57.	5146.	0.698	3594.	1529.	3.92	883.	70.0	5.01	90.8	96.4
58.	5299.	0.687	3638.	1530.	3.86	880.	71.6	4.99	90.8	96.1
59.	5473.	0.676	3701.	1536.	3.93	885.	71.4	5.03	90.8	96.6
60.	5043.	0.715	3604.	1539.	3.87	881.	70.1	4.99	90.8	96.1

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = 20000 MO = 0.7

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
41.	9.37	491.4	44.0	870.	2.01	560.0	1.48	1167.	15851.	3416.
42.	9.18	491.4	43.1	870.	1.96	559.8	1.46	1169.	15286.	3303.
43.	9.37	491.4	43.4	868.	2.00	559.2	1.47	1170.	15733.	3352.
44.	9.37	491.4	44.1	871.	2.01	560.3	1.48	1172.	15889.	3430.
45.	9.18	491.4	42.6	868.	1.96	559.2	1.45	1178.	15204.	3251.

ALT = 30000 MO = 0.4

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
46.	4.87	424.9	28.8	818.	1.80	503.1	1.51	1151.	8449.	2411.
47.	4.78	424.9	28.2	818.	1.76	502.9	1.49	1154.	8129.	2333.
48.	4.87	424.9	28.2	813.	1.79	501.7	1.50	1155.	8352.	2346.
49.	4.87	424.9	28.9	818.	1.80	503.5	1.52	1159.	8482.	2425.
50.	4.78	424.9	27.7	814.	1.75	502.0	1.48	1166.	8062.	2282.

ALT = 30000 MO = 0.6

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
51.	5.57	441.5	31.1	831.	2.01	517.9	1.58	1147.	10267.	2680.
52.	5.46	441.5	30.4	831.	1.97	517.7	1.56	1149.	9909.	2595.
53.	5.57	441.5	30.5	827.	2.00	516.7	1.57	1150.	10158.	2614.
54.	5.57	441.5	31.2	832.	2.01	518.3	1.58	1153.	10301.	2693.
55.	5.46	441.5	29.9	828.	1.96	516.9	1.55	1161.	9828.	2542.

ALT = 30000 MO = 0.82

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
56.	6.79	467.3	34.6	852.	2.36	541.2	1.68	1142.	13248.	3098.
57.	6.65	467.3	33.9	852.	2.31	541.1	1.66	1144.	12828.	3000.
58.	6.79	467.3	34.0	849.	2.35	540.3	1.67	1145.	13140.	3030.
59.	6.79	467.3	34.7	853.	2.36	541.5	1.69	1148.	13284.	3112.
60.	6.65	467.3	33.4	849.	2.30	540.4	1.65	1154.	12754.	2945.

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = 35000 MO = 0.7

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
61.	5067.	0.604	3061.	1524.	4.54	933.	58.4	4.72	92.9	103.5
62.	4823.	0.623	3004.	1525.	4.54	932.	57.2	4.71	92.9	103.3
63.	4936.	0.615	3038.	1526.	4.46	930.	58.5	4.68	92.9	102.7
64.	5102.	0.608	3101.	1534.	4.55	934.	58.3	4.73	92.9	103.8
65.	4728.	0.639	3020.	1538.	4.48	930.	57.3	4.69	92.9	102.8

ALT = 35000 MO = 0.82

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
66.	4900.	0.651	3189.	1523.	4.26	915.	61.5	4.87	92.0	100.0
67.	4658.	0.672	3128.	1524.	4.26	914.	60.3	4.86	92.0	99.9
68.	4758.	0.664	3161.	1526.	4.19	911.	61.6	4.83	92.0	99.5
69.	4936.	0.653	3226.	1533.	4.27	916.	61.5	4.88	92.0	100.3
70.	4555.	0.689	3140.	1537.	4.20	912.	60.3	4.84	92.0	99.6

ALT = 35000 MO = 0.95

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
71.	4717.	0.708	3340.	1524.	3.93	889.	65.3	5.05	90.9	97.1
72.	4477.	0.732	3276.	1525.	3.93	889.	64.0	5.05	90.9	97.1
73.	4584.	0.723	3315.	1527.	3.87	886.	65.4	5.01	90.9	96.7
74.	4752.	0.711	3377.	1533.	3.94	890.	65.3	5.06	90.9	97.3
75.	4377.	0.751	3287.	1537.	3.88	887.	64.1	5.02	90.9	96.8

ALT = 40000 MO = 0.7

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
76.	4023.	0.606	2439.	1523.	4.57	935.	46.1	4.72	93.0	103.8
77.	3830.	0.625	2395.	1524.	4.58	934.	45.2	4.72	93.0	103.7
78.	3895.	0.621	2417.	1527.	4.48	931.	46.3	4.68	93.0	102.9
79.	4058.	0.610	2477.	1536.	4.59	936.	46.1	4.74	93.0	104.2
80.	3736.	0.645	2409.	1542.	4.50	931.	45.3	4.69	93.0	103.1

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = 35000 MO = 0.7

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
61.	4.80	432.6	27.5	824.	2.22	511.1	1.71	1135.	9573.	2558.
62.	4.70	432.6	26.9	824.	2.18	510.9	1.69	1137.	9263.	2478.
63.	4.80	432.6	26.9	819.	2.21	509.8	1.69	1139.	9484.	2492.
64.	4.80	432.6	27.6	824.	2.23	511.5	1.71	1143.	9603.	2571.
65.	4.70	432.6	26.5	820.	2.17	510.1	1.67	1150.	9205.	2425.

ALT = 35000 MO = 0.82

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
66.	5.38	447.0	29.3	835.	2.44	523.9	1.78	1132.	11068.	2783.
67.	5.27	447.0	28.7	835.	2.39	523.8	1.75	1134.	10725.	2698.
68.	5.38	447.0	28.7	831.	2.43	522.8	1.76	1136.	10956.	2712.
69.	5.38	447.0	29.4	836.	2.45	524.3	1.78	1139.	11102.	2797.
70.	5.27	447.0	28.2	832.	2.38	522.9	1.74	1146.	10654.	2641.

ALT = 35000 MO = 0.95

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
71.	6.18	465.2	31.6	850.	2.73	540.2	1.87	1131.	12998.	3072.
72.	6.06	465.2	31.0	850.	2.67	540.1	1.84	1132.	12623.	2974.
73.	6.18	465.2	31.0	846.	2.72	539.2	1.85	1134.	12898.	2998.
74.	6.18	465.2	31.7	850.	2.74	540.5	1.88	1137.	13032.	3087.
75.	6.06	465.2	30.5	847.	2.66	539.4	1.82	1143.	12556.	2915.

ALT = 40000 MO = 0.7

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
76.	3.77	428.3	21.7	818.	2.23	506.6	1.72	1135.	7560.	2029.
77.	3.70	428.3	21.3	818.	2.18	506.4	1.69	1137.	7316.	1965.
78.	3.77	428.3	21.1	813.	2.21	505.0	1.69	1140.	7473.	1964.
79.	3.77	428.3	21.8	819.	2.23	507.1	1.72	1145.	7590.	2042.
80.	3.70	428.3	20.8	814.	2.17	505.4	1.67	1153.	7259.	1913.

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = 40000 MO = 0.82

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
81.	3905.	0.651	2543.	1523.	4.30	918.	48.7	4.87	92.1	100.5
82.	3713.	0.672	2496.	1524.	4.30	917.	47.7	4.87	92.1	100.4
83.	3765.	0.669	2519.	1527.	4.21	912.	48.8	4.83	92.1	99.6
84.	394C.	0.655	2580.	1535.	4.32	919.	48.7	4.88	92.1	100.9
85.	3612.	0.694	2509.	1541.	4.23	914.	47.8	4.84	92.1	99.8

ALT = 40000 MO = 0.95

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
86.	3761.	0.707	2658.	1523.	3.97	891.	51.7	5.05	91.0	97.4
87.	357C.	0.731	2608.	1524.	3.97	891.	50.7	5.05	91.0	97.4
88.	3627.	0.726	2634.	1527.	3.89	887.	51.8	5.01	91.0	96.9
89.	3797.	0.710	2695.	1534.	3.98	893.	51.7	5.06	91.0	97.6
90.	3471.	0.755	2622.	1540.	3.91	888.	50.8	5.02	91.0	97.0

ALT = 45000 MO = 0.7

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
91.	3106.	0.613	1904.	1522.	4.51	929.	35.7	4.78	92.8	102.8
92.	2955.	0.633	1869.	1524.	4.51	929.	35.0	4.78	92.8	102.6
93.	298C.	0.633	1885.	1530.	4.39	924.	35.9	4.73	92.8	101.6
94.	3141.	0.618	1941.	1539.	4.53	931.	35.7	4.80	92.8	103.2
95.	2865.	0.658	1887.	1549.	4.41	925.	35.1	4.74	92.8	101.9

ALT = 45000 MO = 0.82

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
96.	3000.	0.661	1983.	1523.	4.24	911.	37.6	4.93	91.9	99.6
97.	2849.	0.683	1946.	1524.	4.24	910.	36.9	4.93	91.9	99.5
98.	2864.	0.684	1960.	1530.	4.12	904.	37.7	4.87	91.9	98.7
99.	304C.	0.665	2021.	1539.	4.26	913.	37.6	4.95	91.9	99.9
100.	2752.	0.713	1961.	1548.	4.14	906.	36.9	4.89	91.9	98.9

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = 40000 MO = 0.82

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
81.	4.23	442.6	23.2	830.	2.45	519.4	1.79	1132.	8752.	2213.
82.	4.15	442.6	22.7	830.	2.40	519.2	1.76	1135.	8480.	2145.
83.	4.23	442.6	22.6	825.	2.43	518.0	1.76	1138.	8640.	2144.
84.	4.23	442.6	23.3	831.	2.46	519.9	1.80	1141.	8784.	2227.
85.	4.15	442.6	22.2	826.	2.39	518.2	1.74	1150.	8411.	2090.

ALT = 40000 MO = 0.95

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
86.	4.86	460.6	25.0	845.	2.74	535.4	1.89	1130.	10270.	2443.
87.	4.77	460.6	24.5	845.	2.68	535.3	1.85	1132.	9974.	2365.
88.	4.86	460.6	24.4	840.	2.72	534.2	1.85	1135.	10170.	2368.
89.	4.86	460.6	25.1	845.	2.75	535.8	1.89	1139.	10306.	2458.
90.	4.77	460.6	24.0	841.	2.67	534.5	1.83	1146.	9907.	2306.

ALT = 45000 MO = 0.7

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
91.	2.97	428.3	16.8	816.	2.22	505.4	1.70	1137.	5901.	1557.
92.	2.91	428.3	16.5	817.	2.17	505.2	1.67	1139.	5709.	1507.
93.	2.97	428.3	16.3	810.	2.20	503.5	1.67	1146.	5814.	1493.
94.	2.97	428.3	16.9	818.	2.22	506.0	1.71	1150.	5931.	1570.
95.	2.91	428.3	16.0	811.	2.16	504.0	1.65	1162.	5655.	1457.

ALT = 45000 MO = 0.82

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
96.	3.33	442.6	18.0	828.	2.44	518.2	1.77	1134.	6813.	1696.
97.	3.26	442.6	17.6	828.	2.38	518.0	1.74	1137.	6600.	1643.
98.	3.33	442.6	17.4	822.	2.41	516.4	1.74	1143.	6708.	1628.
99.	3.33	442.6	18.1	829.	2.44	518.8	1.78	1147.	6852.	1711.
100.	3.26	442.6	17.1	823.	2.37	516.9	1.72	1158.	6533.	1589.

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = 45000 MO = 0.95

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
101.	2887.	0.717	2071.	1523.	3.91	885.	40.0	5.11	90.8	96.7
102.	2737.	0.743	2032.	1524.	3.91	884.	39.1	5.11	90.8	96.7
103.	2757.	0.744	2050.	1529.	3.81	880.	40.1	5.06	90.8	96.1
104.	2922.	0.721	2108.	1537.	3.93	887.	39.9	5.13	90.8	97.0
105.	2641.	0.775	2047.	1545.	3.83	881.	39.2	5.08	90.8	96.2

ALT = 50000 MO = 0.7

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
106.	2387.	0.622	1485.	1522.	4.44	923.	27.5	4.85	92.6	101.6
107.	2268.	0.643	1458.	1524.	4.44	921.	27.0	4.85	92.6	101.4
108.	2257.	0.650	1466.	1534.	4.28	915.	27.7	4.78	92.6	99.9
109.	2425.	0.628	1523.	1544.	4.47	925.	27.5	4.88	92.6	102.2
110.	2175.	0.678	1476.	1558.	4.31	917.	27.1	4.80	92.6	100.3

ALT = 50000 MO = 0.82

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
111.	2295.	0.672	1543.	1522.	4.16	903.	29.0	5.00	91.7	98.7
112.	2178.	0.695	1515.	1524.	4.16	902.	28.4	5.00	91.7	98.6
113.	2164.	0.704	1524.	1534.	4.02	895.	29.1	4.93	91.7	97.7
114.	2336.	0.677	1582.	1544.	4.19	906.	29.0	5.03	91.7	99.1
115.	2084.	0.735	1532.	1557.	4.04	897.	28.5	4.95	91.7	97.9

ALT = 50000 MO = 0.95

CASE	FN	SFC	WFM	TC	EPR	W2*	W2C	BPR	PCN*	PCNF*
116.	2204.	0.731	1611.	1522.	3.84	877.	30.8	5.19	90.6	96.0
117.	2088.	0.757	1580.	1524.	3.84	877.	30.1	5.20	90.6	95.9
118.	2072.	0.766	1588.	1531.	3.71	871.	30.9	5.13	90.6	95.1
119.	2241.	0.735	1647.	1541.	3.86	880.	30.8	5.21	90.6	96.3
120.	1991.	0.801	1594.	1552.	3.73	872.	30.2	5.14	90.6	95.3

NASA QUIET ENGINE FAN C
1962 U.S. STANDARD ATMOSPHERE, IDEAL NOZZLES
RAM RECOVERY, AIR BLEED AND POWER EXTRACTION EFFECTS

ALT = 45000 MO = 0.95

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
101.	3.82	460.6	19.3	842.	2.72	534.3	1.86	1132.	8007.	1869.
102.	3.75	460.6	18.9	843.	2.67	534.2	1.83	1134.	7773.	1809.
103.	3.82	460.6	18.8	837.	2.70	532.8	1.82	1139.	7910.	1798.
104.	3.82	460.6	19.4	843.	2.73	534.8	1.87	1143.	8042.	1884.
105.	3.75	460.6	18.5	838.	2.65	533.2	1.80	1152.	7710.	1751.

ALT = 50000 MO = 0.7

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
106.	2.33	428.3	13.0	814.	2.20	504.0	1.68	1139.	4596.	1188.
107.	2.29	428.3	12.7	815.	2.16	503.8	1.65	1141.	4444.	1149.
108.	2.33	428.3	12.4	806.	2.17	501.6	1.64	1152.	4502.	1124.
109.	2.33	428.3	13.1	816.	2.21	504.9	1.69	1156.	4630.	1202.
110.	2.29	428.3	12.3	808.	2.14	502.3	1.62	1172.	4384.	1099.

ALT = 50000 MO = 0.82

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
111.	2.62	442.6	13.8	826.	2.42	516.8	1.74	1136.	5297.	1293.
112.	2.56	442.6	13.6	826.	2.37	516.7	1.72	1139.	5131.	1252.
113.	2.62	442.6	13.3	819.	2.39	514.7	1.70	1149.	5196.	1226.
114.	2.62	442.6	14.0	828.	2.43	517.7	1.75	1153.	5338.	1308.
115.	2.56	442.6	13.1	820.	2.35	515.3	1.69	1168.	5066.	1200.

ALT = 50000 MO = 0.95

CASE	P2	T2	PE	TE	P28/P0	T28	P8/P0	T8	FGD	FGM
116.	3.01	460.6	14.9	840.	2.70	533.0	1.83	1133.	6232.	1421.
117.	2.95	460.6	14.6	840.	2.65	532.9	1.80	1135.	6049.	1375.
118.	3.01	460.6	14.3	833.	2.67	530.9	1.78	1143.	6128.	1351.
119.	3.01	460.6	15.0	841.	2.71	533.7	1.84	1148.	6269.	1437.
120.	2.95	460.6	14.1	834.	2.62	531.4	1.76	1161.	5977.	1321.